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EDITOR

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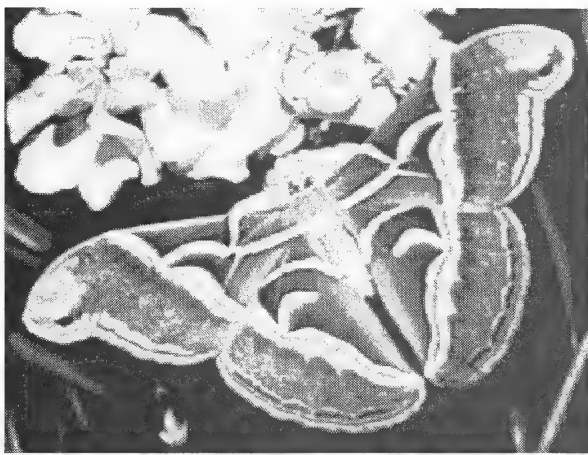
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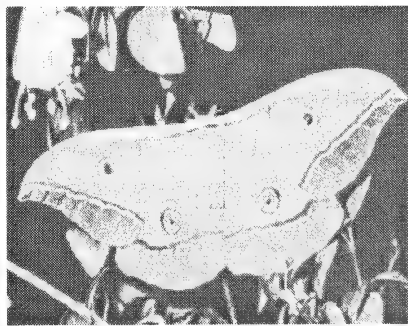
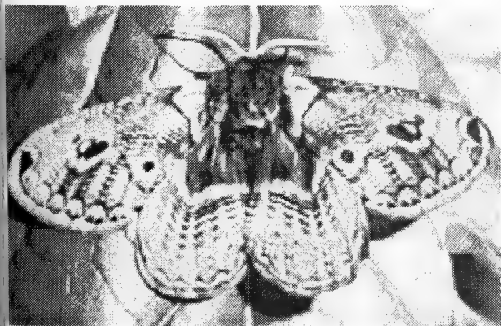
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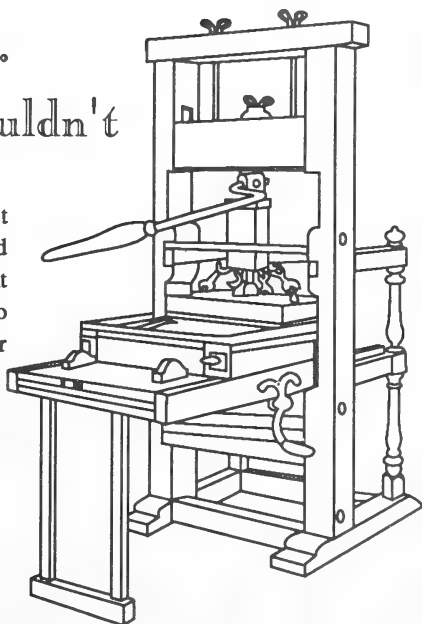
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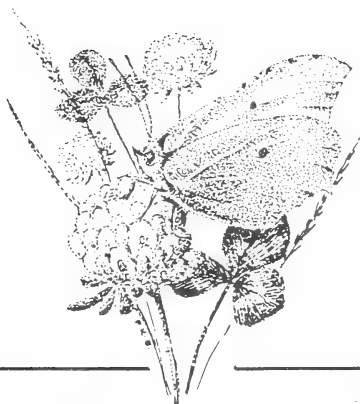
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AES BULLETIN

No. 392



OBITUARY AND APPRECIATION — PETER WILLIAM CRIBB 1920 - 1993

The Society has suffered a sad blow with the death of Peter Cribb (Plates I & II). Peter died on 31st October following a short period in hospital. He was a man of tremendous knowledge of the natural world and an outstanding member of the AES making his mark in so many ways. He had a predisposition to both mental and physical activity and was always busy.

Peter's contributions to the *Bulletin* were many and varied. Most members will be unable to recall an edition without contributions from 'PWC'. His writings covered AES publications including books and pamphlets, notes and observations on species, habitats, collecting practice etc., book reviews and accounts of his annual Continental safaris. These latter inspired and motivated many members, young and old, to widen their entomological horizons. His accounts, which gave useful information on practical issues, were avidly read by many members. Quite a number found them stimulating enough to plan their own safaris: others who could no longer indulge themselves had their memories kindled by Peter's pen.

Over the years the AES Annual Exhibition has been a strong stimulus to the membership. Its great merit is that it brings together people who are fascinated by entomology and who would probably not have the chance to meet so many similarly-minded folk but for this event. To a large extent its success has been due to the participation in various roles of Peter. Year after year he was in the forefront of organisation and service.

Many causes have good reason to be grateful to Peter for his efforts on their behalf. He was prime-mover in the action to oppose the destruction (by ploughing) of Ditchling Common. As a result of his success in this campaign he was called on to advise others similarly fighting undesirable

change. Not only did he assist in preservation activity in respect of commons but his efforts were directed against any proposals involving habitat destruction. He collated material and prepared cases relating to the environmental impact of various land development schemes especially certain major road/motorway proposals. In these areas he was ever willing to help others.

In his private life Peter enjoyed gardening, bee-keeping and fishing (Plate II). He had a very good knowledge of plants. He developed skills in pottery, wood-carving, printing and book-binding to name but a few. Our sympathies go out to his widow and family.

Many young, and a good number not-so-young, will have been inspired and encouraged by Peter's example. I was indeed fortunate to have him as a special personal friend: the Society was lucky to have had the benefit of his knowledge and energy for so many years. Knowing Peter Cribb enriched the lives of so many amateur entomologists.

David Marshall

Peter joined our Society in 1953 and was elected in 1957 to Council on which he served until his death making him not only the longest serving member but giving continuity to the affairs of the Society. Not only was his ability to see to the root of a problem a great asset to the Society, but his jokes and anecdotes at Council meetings were, over the years, as the other members came and went, a ready means of putting the newcomers at their ease and keeping the meetings very friendly and informal affairs. Whenever anything needed finding out, or doing, Peter was always the first volunteer and always got on with the job. Whenever another Officer of the Society was unable to attend to his duties through illness or family affairs, Peter would step into the breach and take over. Peter served as President, gave talks and demonstrations at our AGM and other meetings, and, for most of his time on Council, helped by his family, he was the mainstay at our Annual Exhibition, helping both to set up and clear up, manning the "Front Table" where new members were enrolled, questions answered, surplus stock sold on behalf of the Society and sorting out problems. In view of his sterling services to the Society Peter was elected an Honorary Life Member in 1980.

When he was appointed General Editor in 1975 he at once got on with the job and perhaps his greatest asset in this post was his ability to assess the need for a particular publication and then persuade an appropriate author to write it. Once the manuscript was to hand he would edit it as necessary, obtain printers' estimates, check the proofs and generally see it through to completion.

Peter had a knack when it came to breeding butterflies and for nearly forty years maintained a culture of the Marsh fritillary in his garden, stocks of which he was always willing to distribute to fellow entomologists, together with help and advice.

Year after year Peter would go off on a camping holiday, generally to Europe, and year after year would write up his experiences and these were regularly published in our *Bulletin* and serve as a remarkable guide to European butterflies and the changes that have taken place over the years. His last such account appears in this issue.

Peter first published in the *Bulletin* in 1956 and not a year has gone by since then without several items from his pen appearing in every volume. Apart from his longer articles on studying European butterflies these included breeding notes, book reviews, and observations on a wide variety of subjects. His bibliography of articles published in *The Bulletin of the Amateur Entomologists' Society* appears below.

Brian Gardiner

PETER W. CRIBB (PWC): AN AES BIBLIOGRAPHY

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 1975-1993 As General Editor of the Society, the majority of the Society's other publications during this period were suggested by Peter, commissioned by him, edited by him and seen through the press by him, although this is not always so stated in the publication.

BOOK REVIEW

The Hawkmoths of the Western Palaearctic by A.R. Pittaway. 290x215mm, 240pp, 60 Figs, 58 maps, 20 coloured plates. Hardback. ISBN 0 946589 21 6. Harley Books, Colchester 1993. Price £55.00.

This is another excellent book from the Harley stable. It is without doubt the most comprehensive book dealing with hawkmoths published in recent years.

For those of us whose geography is somewhat lacking the introduction clearly sets out the boundaries and countries defined as the Western Palaearctic region. The first 74 pages of the book introduce the life history, morphology, ecology and classification of these fascinating insects. Included are 42 superb colour photographs depicting habitats, ova, larvae and adult moths.

This is followed by over 90 pages dealing with individual species and subspecies. For each species detailed descriptions are given of the early stages including foodplants, the adults, parasitoids, notes on breeding and distribution including a map for each species. The final set of coloured plates depict the larvae of 45 species and 110 adult moths.

Although it is rather pricey, if you can afford it, it will make a wonderful addition to your library, and will provide many hours of enjoyable reading.

R.A. Fry

BOOK REVIEW — CORRECTION OF ERROR

I wish to correct errors that I made in my review *Lepidoptera of the Midland (Birmingham) Plateau* that was published on page 273 of the December issue. The book has 156 pages and not the 277 as stated, being pages 121-277 of the BHNS Proceedings, Vol. 26. The principal contributors are all deceased and the whole book was prepared, proof-read and typed by the author and his family. My apologies to all concerned.

Roy McCormick.

BOOK REVIEW

Endangered wildlife in Dorset: the county Red Data book edited by A. Mahon and D. Pearman. A5, pp135, illustrated. Dorset Environmental Records Centre (Colliton House Annexe, Glyde Path Road, Dorchester DT1 1XJ), 1993. Price £6.00 (+ post 50p).

I believe this is the second county "Red Data" list to be published, the first having been for Lincolnshire. Covering not just insects but all flora and fauna, this comprehensive list has the advantage over some lists of being attractively illustrated with black and white drawings of various species. Its disadvantage is its "perfect" binding which makes it act like a coiled spring and refuse to lie flat whilst being consulted. I fear that those who force it will end up with detached pages. Otherwise it is well printed and has some delightful black and white illustrations by R.J.H. Murray.

Dorset is perhaps the most prolific of our counties for many animals, not just insects, and it is disturbing to see from this book just how over-development and changing farmland practices have led to so many of them being in danger. With such a wide coverage, from mammals to lichens, this is a multi-author book standardised (nearly!) by the authors in a double column layout. For the animals the vernacular name, in bold type, appears first (when there is one), under which is the scientific name, but for the plants this order is reversed. Surprisingly, Dorset does not have any endangered microlepidoptera, woodlice or fish, or, more likely perhaps, no recorders of these groups.

An account of its distribution in Dorset is given for each species, with an assessment of its recent history and a clear indication of its vulnerability by the use of three boldly printed letters; **R** = National Red Data Book species; **S** = Nationally Scarce species; **D** = Dorset Scarce species which occur in less than three sites in the county. The descriptions are concise and there are brief snippets of information about the species, although many species for which no recent information is available are simply listed. In view of their numbers, insects form the largest portion of this book and it is, I feel, informative to have all the endangered species which occur in a limited area brought together in a single book, including the endangered plants upon which the endangered insects and other animals might be feeding.

The great advantage of a book such as this is that it gathers together commonly known but scattered information and hence brings to light not just absentia but draws people's attention to knowledge they have about distribution and threats which they were not aware needed recording and given publicity and I am sure this will result in a spate of new information concerning wildlife in Dorset being brought to the attention of the Dorset Environmental Records Centre.

Brian Gardiner

SPAIN REVISITED — 1993

by Peter W. Cribb (2270)

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On the 12th July, David Marshall and I left Portsmouth for Cherbourg in my camping caravan with the intention of revisiting the areas which we had previously visited in central Spain. To this was added the opportunity of meeting our Spanish member, Juan Font-Bustos, who lives at Castellon de la Plana. After camping the night at Torigni, we made good time through France to spend the second night camping *au savage* north of Langon in a stone quarry. Next morning we passed through Pau and took the Col du Portalet through the Pyrenees. The road on the French side is unimproved but a major new road commences at the Spanish border, taking us down to Huesca, Zaragoza and the road leading to Teruel, via Daroca. At Ste Eulalia we drove eastwards towards Bronchales in the Montes Universales where we camped for the night on the limestone pavement with aerial formations of swifts swooping overhead. We had travelled over 800 miles in two days to reach our first destination.

Next morning we drove through Bronchales and down to Albarracin for petrol and a telephone. The latter facility swallowed money but failed to work. We then drove back into the Sierra de Albarracin to the area outside the village of Moscardon where a camping site has been formed in our old collecting site. This valley had been one of the most productive when I had visited it with Leo Coleridge and Lionel Higgins back in the 1960s, but all has changed. Grazing by large flocks of sheep appears to be the major cause of change as the camping area is fairly limited. We had observed on the way up from Albarracin that all the bottom lands have been ploughed, even small hollows, and those areas which used to provide a feast of butterflies are gone. Much of the land was unsown, presumably ready for sowing next season and open for winter rains to deposit much of it in the Rio Guadalaviar as we had observed on a previous visit. One presumes that stock which used to graze there has now had to move into the hills and all round Moscardon the slopes were like lawns. They used to be thick with *Hippocrepis* and other vetches and carpets of wild flowers.

One wonders at our "set-aside scheme", intended to reduce the grain mountain, made ineffective by all this new breaking of ground to the plough in Spain. Perhaps it has to be ploughed first to qualify for the "set-aside" grant, probably already having received a grant to be ploughed. There seems an element of lunacy present.

We spent the day exploring and found the only common species to be *B. hecate* with singletons or a few specimens of *L. albicans*, *L.*

coelestissima, *P. escheri*, *A. thersites*, *A. cramera*, *S. spini* and *P. argus* among the blues. The Satyrs included *C. dorus*, *C. arcania* and *C. iphioides*, *B. circe*, *H. alcyone*, *H. semele*, *P. bathseba*, *P. cecilia* (= *ida*), *M. jurtina* and *L. megera*, *M. russiae* and *M. lachesis*. The Nymphalids in addition to *B. hecate* were *B. ino*, *F. adippe* f. *chlorodippe*, *L. reducta*, *V. atalanta*, *I. io* and *A. urticae*. The whites, both *G. rhamni* and *G. cleopatra*, *A. crataegi*, *L. sinapis* and *C. croceus* and *C. alfacariensis*; the skippers were again singletons of *T. lineola*, *O. venata*, *S. sertorius* and *P. carthami*. Slopes which once swarmed with insects were often devoid of anything flying. In the late afternoon we went up to Moscardon for wine and bread and I found a 'phone in a house and rang Juan's home. His son answered in perfect English and said that his father was on his way. We drove back to the camping area and as we pulled into a clearing off the road, Juan drove in behind us in his Citroën. We spent a pleasant evening chatting while Pine hawks and Hummingbird hawks buzzed around the honeysuckle bushes. While sitting in the evening sunshine we watched a Peregrine falcon attacking a short-toed eagle, climbing high above it and then falling like a plummet to strike at the eagle which rolled away beneath it. The tussle continued across the sky, the falcon presumably protecting its nest. Later Juan set up a small battery-operated light trap which produced a few interesting moths including *Dendrolimus pini* (Pine lappet). A couple of tough looking Spaniards then turned up and demanded a camp fee of 500 pesetas. We tried to argue the point that there were no facilities and we had always camped there free but it appears that wash-houses, etc have been built above the area and we could use them if we wished. I later found a notice saying that camping, other than on designated sites, was prohibited — an easy way of making money. We paid up with resentment. Later David and Juan went to look at the facilities and have a drink in the little bar also provided. In conversation it was learned that no snow had fallen in these mountains during the last four winters, whereas previously it had been a regular feature. This would undoubtedly have affected both the vegetation and overwintering insects and probably is a further factor in the dramatic decline in numbers. We went to bed with plans for a foray in the morning.

Juan had talked of a hidden valley near Tragacete where a friend had found a paradise of butterflies and we decided we should visit it. Rising early, we drove via Frias de Albarracin and the source of the Tagus river into the mountains where at a roadside stop we found *P. apollo* flying over a limestone scree; all were males and at this altitude we were probably too early for the females. We visited Tragacete to refuel. There is a new high quality road coming from Cuenca and leading only to a waterfall beyond the village. This road has a branch of similar standard further south, leading to a strange rock formation called "The

Enchanted City". One wonders at the millions that must have been spent on these roads which lead only to features for tourists. We followed the river Jucar down to the village of Huelarmo and then drove off onto a dirt track to park our vehicles beside a farm building. From here we walked across bare hillsides to reach a deep valley down which flowed a small stream. This issued from a cleft in a high rocky escarpment and to enter the valley we removed our shoes and paddled up the stream for some distance with heavy undergrowth crowding our passage. At last we came out into a wide valley with trees and open grassy slopes and prepared to see a feast of insects. Quickly we realised that the whole area had again been heavily grazed, both by cattle and sheep, and again the butterflies present were only in ones and twos. The species present were the same as at Moscardon with single specimens of *A. lathonia*, *P. nivescens*, *M. phoebe*, *M. parthenoides*, *N. acaciae*, *H. alciphron* and *M. arion* with two specimens of *L. roboris*. We worked right up the valley to the encircling rocky precipice and found a track coming in over a col and here were the cattle — a large herd of cows and a bull — obviously having come into the valley by the col. It was extremely hot and we rested in the shade of the pines by the stream before starting our return journey. Instead of going back via the stream, we found a sheep track leading up into the crags and then slowly down into the valley where we had made our entry. On the way back to the vehicles we rather lost our way by following the stream and had to make a detour back over the arid slopes, eventually finding the farmstead and our cars. The whole episode had been a disappointment for Juan as well as for ourselves but it is indicative of the way things are moving since Spain became a member of the EEC. (Peter and Juan are shown together on Plate III, Fig. 1).

It was now quite late in the afternoon and we drove down towards Una to stop below the new huge reservoir formed from the river. Here we said goodbye to Juan who was to return to Castellon and decided to camp the night near the river. The old aqueduct which we had found here on a previous visit was now almost empty, the new reservoir seemingly having made it redundant. In the evening sunshine we watched the vultures returning to their nests in the red buttresses above the valley — wonderful aerial manoeuvres from birds which are so clumsy on the ground. (Fig. 2 on Plate III shows Peter beside his camper van.)

On the morning of the 17th we drove down to the trout farm at Uno and climbed up into the gorge behind. The air was full of the trilling of hundreds of alpine swifts as they swooped in groups along the cliff face where they nested. They are much bigger than our swifts and their song is not unpleasant. Here was an area that had not been spoiled and we recorded a large number of species, though the blues were mainly single specimens. The Satyrs dominated with *B. circe*, hundreds of *H. alcyone*,

P. bathseba, *M. jurtina*, *H. lycaon*, *H. semele*, *C. dorus*, *C. iphioides* and *M. lachesis*. The Nymphalids were *F. adippe chlorodippe*, *A. paphia*, *A. aglaja*, *P. pandora*, *A. lathonia*, *P. c-album*, *V. atalanta*, *L. reducta*, *B. ino*, *B. hecate*, *M. parthenoides*, *M. deione*, *M. phoebe* and *B. daphne*. The Pieridae were *G. cleopatra*, *G. rhamni*, *P. napi* (almost devoid of underside markings), *P. rapae*, *A. crataegi*, *C. croceus* and *C. alfacariensis*. The Lycaenidae were *L. roboris*, *L. bellargus*, *L. coelestissima*, *A. cramera*, *P. argus*, *P. dorylas*, a single *P. nivescens*, *L. thersites*, *N. ilicis*, *N. spini*, *L. phlaeas*. The skippers present were *T. sylvestris*, *T. actaeon*, *O. venata*, *S. sertorius* and *S. proto*. In the heat of the day we walked back to the trout farm where we watched some huge brown trout in one of the breeding pools and thousands of younger fish being bred for stocking purposes. It was nice to see that they were all native fish.

We had a beer in the village near a reedy lake and then drove up to the slopes beyond the village. The road widening had demolished some of the flowery banks which had abounded in butterflies on our previous visit but the same species which had been seen at the trout farm were present, though in reduced numbers. We then took the side road which leads to the "Enchanted City" — a major road now. There were quite a few cars and coaches parked at the entrance to the rock formations and in view of the lateness of the day and the large number of people, we turned round and drove back into the pine forest, pulling off the road to camp on an old road construction site. We had our supper and were ready for bed when an aborigine arrived, complete with leather wine bottle, staff and haversack. He indicated that he didn't want us to camp there but it was almost impossible to communicate. He then offered us a drink of his wine which he squirted into his mouth and continued to harangue us. So reluctantly we up-anchored and drove a few miles down the road to camp in a clearing above a very deep gorge. Next morning we continued on the new road which led down to Cuenca and then by a further new road, doubling the carriageway of the original road, to Arganda and there restocked with wine and bread before driving on to Las Palomas near Loeches where we had camped in previous years.

Here all was arid and very hot as we explored the hills above the olive groves. *P. daplidice* was common, flying fast over the slopes with *C. croceus* and *C. alfacariensis*. The pods of *Colutea arborescens* were all dried out and a large number bore the exit holes of the larvae of *I. iolas* or *L. boeticus* and we observed a few of the latter species on the wing. Few other species were flying in the heat of the day but we recorded *P. escheri*, *A. thersites*, *M. jurtina*, *C. dorus* and *P. tithonus* and one or two *P. fidia* in perfect condition. We then searched for the larval webs of *E. desfontainii* and eventually found several on plants of a fine-leaved

scabious, probably *Knautia integrifolia*. David found a full-fed larva of what we assumed at first to be the Spurge hawkmoth, *Hyles euphorbiae*, but it lacked the red markings of that species and could have been *H. nicaea*. We camped the night near a chalkpit, interrupted by a large family group in several cars, who arrived to have their evening meal.

On Monday, 19th July, we left Loeches and drove through the maze of streets of Alca de Henares to take the Guadalajara road, leaving it to drive north via Torrelaguna towards Burgos, our destination being the limestone hills behind Monasterio de Rodillo. The late Col. Manley had found an interesting race of *P. apollo* here many years ago and we spent the day exploring the slopes and hill crests in bright sunshine, but did not see one Apollo. There were plenty of *N. esculi* flying round the scrubby oaks and we saw *H. semele*, *M. russiae*, *M. lachesis* and a few *P. argus* and a single *L. coridon* female. It was rather disappointing as the slopes still bore a good growth of *Sedum alba* and the area is very large and not overgrazed although the lower slopes are now all ploughed.

In the late afternoon we drove on northwards by side roads, where we disturbed six Griffon vultures feeding near to the road, towards the village of Sedano to camp on the high plateau above the village. In the evening sunshine we walked along the area between the roadway and the pine woods and found plenty of butterflies resting or flying when disturbed — thousands of *M. russiae*, also *M. galathea*, *C. croceus* and *C. alfacariensis*, *M. daphnis*, *A. ainsae*, *P. argus*, *H. semele*, *H. alcyone*, *B. circe*, *M. jurtina*, *G. cleopatra*, *P. daplidice* and *A. crataegi*. It is interesting here that there was *M. galathea* and not *lachesis*. The distribution of these two seems irregular in the north. I have also found small colonies of the *lachesis* form in southern France. Careful search also discovered several webs of *E. desfontainii* occurring on both a fine leaved and broader leaved species of scabious. All were where the plants occurred on almost bare tracks and plants growing in herbage did not seem to be used. We camped the night in a meadow off the road and woke on the 20th to find total cloud cover and fitful fine rain. We watched ten vultures circling overhead drifting with the prevailing wind until they were specks on the horizon. We drove down the winding road to the village to buy bread and use the 'phone, the latter again devouring pesetas without any success. Should we grumble about our own public 'phones? We then drove back to Portillo de Fresna and the sun came out so that we added *P. dorylas*, *L. boeticus*, *L. maera*, *M. cinxia*, *M. parthenoides*, *M. didyma*, *B. hecate* and *P. pandora* to our records. I found large webs of what appeared to be an Arctiid moth feeding on spurge but these failed to feed on cypress or petty spurge when brought home and all died. There were full-fed larvae of the Painted lady (*C. cardui*) on the thistles and David noticed that several webs of *E.*

desfontainii which he found were devoid of larvae. Observation indicated that black ants were taking larvae from other webs nearby and these were probably the culprits. On a flower head we discovered two apparently different species of Burnet moth *in copula*. These we boxed and they remained joined for four days and the following day we found the pair were dead, still coupled.

In the late afternoon we drove eastwards into the Sierras via Poza del Sal, coming down a steep escarpment to the village. All along the valley were salt-drying cisterns. Reaching the plain, we camped in sandy pine woods full of *Cistus*, *Erica* and *Calluna* near the village of Cornudillo. In the evening we watched buzzards, vultures and flights of bee-eaters coming in to roost. All around us were the High Sierras with a wonderful sunset. This wood was devoid of insect life other than a single *M. lachesis* roosting on a thistle head.

In the morning, after road diversions, we drove via Vitoria and Pamplona to take the Val de Carlos road through the western Pyrenees. This is a good road with reasonable gradients, passing through some beautiful countryside. There was no check or customs at the French border and we drove north through Dax in light rain to camp in the Landes pine forests north of St Paul les Dax. Next morning, 22nd July, we explored the forest clearings where we observed two roe deer and an adder, also a Hobby falcon which appeared to have a nest nearby. *M. dryas* was quite common and we eventually took a female for egg-laying. Also flying were *A. arethusa*, *P. dorylas*, *C. dorus*, *H. morpheus* and *P. tithonus*. Back at the camper I observed that the female *C. croceus* which I had taken at Sedano were beginning to lay eggs on the clover flower heads and leaves. These eggs eventually produced about twenty pupae.

I had always wanted to have a look at the lakes (étangs) in the coastal area south of Bordeaux so we drove off to the village of Ste Eulalie (a popular saint it would seem). It was all a bit disappointing as there were camp sites everywhere, crowds of people all around the lakes and the marshlands which I hoped would be of interest were heavily overgrown with willow and alder with an undergrowth of huge ferns and were almost impenetrable; quite unlike what we had expected. We then drove north-east to camp beside a small clear and deep river in the midst of arable land. There appeared to be only minnows in the stream and along its banks we observed *C. croceus*, *H. semele*, *P. icarus* and many *P. tithonus*. By the river we found a coypu which appeared to be dying, presumably having been poisoned. It reared up as we approached it but then fell back exhausted. That evening it rained slightly with wind and heavy cloud cover.

Lowland France is now so heavily cultivated that only the forests have any wealth of wildlife, though the few remaining marshlands have

possibilities. There appear on the map, west of Chateauroux and north of Argenton sur Creuse, a large mass of lakes which I felt might be worth investigating, so in the morning we crossed the Dordogne and reached this area via Limoges. We found that the lakes appeared mainly to be on private land and from the numbers of ducks it would appear that this is an area used for "la Chasse". Certainly the roadsides had high fencing with "keep out" signs. We came to the village of Meobecq and took a narrow road leading towards a large pine forest where we stopped to camp. There were signs of wild pigs everywhere and redshanks and herons flew over us towards the nearby lakes. The woodland puddles were full of green frogs but the only insects seemed to be mosquitoes. Next morning, in bright sunshine, we drove around the area and found a large marshland, fairly heavily invaded by sallow through which rides had been cut, presumably for shooting. The only butterfly seen of any interest was *E. argiades*, a single male. It was all rather disappointing and we continued our journey northwards to stop for lunch by a small woodland near Descartes. While we sat in the shade, a female *A. paphia* circled us and then, entering under the canopy, commenced to lay her eggs on the trunks of the oaks there. I was surprised to see her lay at a height of 10ft from the ground. As she circled the tree I was able to net her and subsequently she laid about sixty eggs in an ice-cream carton covered in netting. These were deposited, in the main, among the florets of the sprays of *Buddleia* which I had placed into the carton to feed her on. Our next stop was by a huge oak forest near Villaines les Rochers. The area, we discovered later, is a military zone. Almost as soon as we stopped, David netted a male *A. ilia* which settled on the track. Apart from a few *P. aegeria* nothing else was flying but I started to search the honeysuckle sprays growing round the boles of the oaks and almost every plant had one or more small larvae of *L. camilla* and David found two eggs. In the evening we reached La Flèche where we camped in the municipal camp site beside the river Loir (not the Loire). This gave us a chance to have a shower and make ourselves presentable for the homeward journey. On the 25th we continued north through Sables and Vire where we met our first heavy rain of the trip. We had our lunch in a disused quarry where the sun came out for a short time and we saw Jersey tigers (*Euplagia quadripunctaria*) flying, and a very fat female adder. In the afternoon we visited St Mere-Eglise where the American airborne landings on D-day had occurred. The town is very much a museum catering for American visitors with a model of a parachute soldier hanging by his 'chute from the church tower. Inside the church were two fine stained-glass windows commemorating the event, made by an artist from Chartres. At Cherbourg we were able to catch the ferry which left at 2.15am, and were home at Feltham in time for breakfast.

They say one should never go back, and increasingly this must be said for the butterfly haunts in much of Europe. Wildlife pays dearly for the increased changes in land usage brought about by the use of subsidies and grants arising from the Common Market.

APPENDIX

Since neither the full name of the genus, nor the vernacular name, were given in the text of this article, they are here listed, alphabetically under species as mentioned in the text, for convenience and clarity.

- acaciae*, *Nordmannia* Sloe hairstreak
acteon, *Thymelicus* Lulworth skipper
adippe, *Argynnis* High brown fritillary
aegeria, *Pararge* Speckled wood
aglaja, *Argynnis* Dark green fritillary
ainsae, *Agrodiaetus* Forster's furry blue
albicans, *Lysandra* Spanish chalk-hill blue
alciphron, *Heodes* Purple-shot copper
alcyone, *Hipparchia* Rock grayling
alfacarienensis, *Colias* Berger's clouded yellow
apollo, *Parnassius* Apollo
arcania, *Coenonympha* Pearly heath
arethusia, *Arethusana* False grayling
argiades, *Everes* Short-tailed blue
argus, *Plebejus* Silver-studded blue
arion, *Maculinea* Large blue
atalanta, *Vanessa* Red admiral
bathseba, *Pyronia* Spanish gatekeeper
bellargus, *Lysandra* Adonis blue
boeticus, *Lampides* Long-tailed blue
Carcharodes Southern marbled skipper
c-album, *Polygonia* Comma
camilla, *Ladoga* White admiral
cardui, *Cynthia* Painted lady
carthami, *Pyrgus* Safflower skipper
cecilia, *Pyronia* Southern gatekeeper
cinxia, *Melitaea* Glanville fritillary
circe, *Brintesia* Great banded grayling
cleoptara, *Gonepteryx* Cleopatra
coelestinus, *Agrodiaetus* Pontic blue
coelestissima, *Lysandra* Azure chalk-hill blue
coridon, *Lysandra* Chalk-hill blue
cramera, *Aricia* Southern brown argus
crataegi, *Aporia* Black-veined white
croceus, *Colias* Clouded yellow
daphne, *Brenthis* Marbled fritillary
daphnis, *Meleageria* Meleager's blue
daplidice, *Pontia* Bath white
deione, *Mellicta* Provencal fritillary
desfontainii, *Eurodryas* Spanish fritillary
didyma, *Melitaea* Spotted fritillary
dorus, *Coenonympha* Dusky heath
dorylas, *Plebicula* Turquoise blue
dryas, *Minois* Dryad
escheri, *Agrodiaetus* Escher's blue
esculi, *Nordmannia* False ilex hairstreak
galathea, *Melanargia* Marbled white
hecate, *Brenthis* Twin-spot fritillary
icarus, *Polyommatus* Common blue
ilia, *Apatura* Lesser purple emperor
ilicis, *Nordmannia* Ilex hairstreak
ino, *Brenthis* Lesser marbled fritillary
io, *Inachis* Peacock
iolas, *Iolana* Iolas blue
iphioides, *Coenonympha* Spanish heath
jurtina, *Maniola* Meadow brown
lachesis, *Melanargia* Marbled white
lathonia, *Argynnis* Queen of Spain fritillary
lineola, *Thymelicus* Essex skipper
lycaon, *Hyponephele* Dusky meadow brown
maera, *Lasiommata* Large wall brown
megea, *Lasiommata* Wall butterfly
morpheus, *Heteropterus* Large chequered skipper
napi, *Pieris* Green-veined white
nivescens, *Plebicula* Mother-of-pearl blue
pandora, *Argynnis* Mediterranean fritillary
paphia, *Argynnis* Silver-washed fritillary
parthenoides, *Mellicta* Meadow fritillary
phlaeas, *Lycæna* Small copper
phoebe, *Melitaea* Knapweed fritillary
proto, *Sloperio* Large grizzled skipper
rapae, *Pieris* Small white

reducta, *Limenitis* Southern white admiral
rhamni, *Gonepteryx* Brimstone
roboris, *Laeosopis* Spanish purple hairstreak
russiae, *Melanargia* Esper's marbled white
semele, *Hipparchia* Grayling
sertorius, *Spialia* Red-underwing skipper

sinapis, *Leptidea* Wood white
spini, *Strymonidia* Blue-spot hairstreak
sylvestris, *Thymelicus* Small skipper
thersites, *Agrodiaetus* Chapman's blue
tithonus, *Pyronia* Gatekeeper
urticae, *Aglais* Small tortoiseshell

BOOK REVIEW

Ground beetles in the Yorkshire Museum: The H.W. Ellis collection of Carabidae by Michael Denton. A5 paperback. pp83. ISBN 0 905807 06 5. York, 1993. Available from the Museum, Museum Gardens, York YO1 2SR. Price: Free for sending a 50p A4 SAE.

Herbert Ellis was a prolific collector early this century, not just of beetles but also of Lepidoptera, Hemiptera, Hymenoptera etc. Not that he collected them all himself, either buying or exchanging them, for his specimens in the York Museum bear such illustrious names on their data labels as J.C. Fryer, G.C. Chapman, G.R. Crotch, E.W. Janson, N.H. Joy, J.W. Douglas, Canon Fowler and many other well-known Victorian and Edwardian personalities. Over 80,000 of his beetles are now in the Museum and have recently been curated and added to by Michael Denton who has also taken the opportunity to catalogue and have published these details of this important working collection which is now available to Coleopterists with a study area provided.

The book gives a summary of the few facts known about Ellis and then goes on to list the 12,000 or so Carabids in the collection, following Kloet and Hincks's 1977 Checklist. Some of the specimens, unfortunately, are without, or with indecipherable, data and this is dealt with in the text which also names those not in the collection with details of their known (they are usually the very rare ones!) distribution. Ellis's specimens came from all over the country and the number vary from a singleton to over 100 per species. To give an idea of the coverage and comments I list the text for *Harpalus quadripunctatus*:- ". . . eight specimens. Widespread but very local. The recent records indicate that the species may have a northern distribution, although in the past it has been recorded in southern England. The Ellis specimens originate from Braemar, Grampian; Aviemore, Highland and Cheddar, Somerset."

The book ends with a bibliography of Ellis's few published notes; a list of York Museum's insect holdings and an adequate index which also lists the total number of each beetle species. The book is well presented and clearly printed with a coloured cover. No Carabiologist can do without it.

Congratulations to North Yorkshire County Council, Yorkshire and Humberside Museums Council and Yorkshire Philosophical Society for subsidising this publication so that it only costs the postage.

BOOK REVIEW

Butterflies and climate change, by Roger L.H. Dennis. xvi + 302pp., 16 Tables, 40 text-figs. Manchester University Press, Manchester, 1993. ISBN 07190 3508 8, Price £50.00 hardback, or ISBN 07190 4033 7, £19.99 paperback.

The main text of this book, following a brief preface, is in five parts. The first three parts are concerned with the present day (definitions of "weather" and "climate" and an account of their effect on butterfly biology; the effect of climate on life-cycles, distributions and species-richness; wing morphology and its adaptations to climatic conditions). Part four is an attempt to reconstruct how past changes in world climate shaped the diversity and distribution of butterflies; and part five is a prediction of the future. This is followed by a one and a half page "Glossary" — (regrettably of "symbols" only), a 51 page bibliography containing no fewer than 1035 references, and an index.

In his previous works (two books and numerous papers) Roger Dennis pioneered a whole new concept of benign butterfly study, far removed from the musty world of "collections" and "taxonomy", and in this latest book he develops his concept further, emphasising how butterflies are dynamic living organisms and how they have evolved, and continue to evolve, as part of the overall scheme of Nature. Regrettably he was unable to continue with as much field work as he would have wished, but he has amply compensated for this by his acute powers of analysing the writings of others and combining the results to present a reasoned model. In this book he has drawn together many of the important conclusions from his own insular experiences, including his favoured patch on the Great Orme, fitted them into a global context (albeit with a strong European bias), and come up with a vision which, if correct, should give us Lepidopterists great encouragement for the future in spite of the popular "doom-and-gloom" predictions about the "greenhouse effect" and "global warming".

He does however sound a cautionary note on p. 208: "There is little point in speculating on the biogeographical changes of butterflies within the tropical rain forest biome from climatic changes . . . as such changes are insignificant compared to the wholesale destruction of this ecosystem which shows no sign of abating", and nearer home he prophesies extinctions in the Mediterranean area. One cannot help thinking that his predictions for our own isles, of many new colonisations and northward spread (apart from species, like the Large heath, dependent on northern mires) are perhaps a trifle too optimistic.

Regrettably a small number of typographical errors have crept in. For example, in the caption of Fig. 1.4 "Papilionidae" should presumably be the more general "Papilionoidea"; the rectangle labelled "Biennial" in

Fig. 2.2 should clearly be black; the mysterious *Sotriaena medus* referred to on p. 16 is no doubt identical to the butterfly correctly called *Orsotriaena medus* in the discussion of seasonal polyphenism (a subject, incidentally, of great interest to the reviewer) on p. 128; two names are misspelt on p. 130; etc. — but these are very minor quibbles.

This is primarily a book for scientists. It is certainly not a light read. Many passages in it need returning to and re-reading several times for full understanding. On the other hand, the abundance of very explicit text-figures are a big help to make the meaning clear. The price of the hardback version could deter some potential buyers, but not so the paperback: this is excellent value, and brings the challenge of this thought-provoking book well within the reach of any butterfly enthusiast whose interest in these insects has progressed beyond the “pretty-butterfly-on-the-garden-buddleia” concept. To all such enthusiasts my advice is, give this book a try; you won’t regret it.

P.B. Hardy

WASPS ATTACKING BLACK ANTS

by Jan Korýszko (6089)

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In recent years in our *Bulletin*, there have been a number of records on the Common wasp attacking certain insects. On 25th July 1993, I was doing some outdoor painting, when I noticed a Common wasp land on the ground and start attacking some black ants which had been running about on my garden path. The wasp bit the ants and just left them dead or almost dead on the path.

By the time it had killed around ten ants it had to retreat because about twenty of the ants came out of the ground to attack the wasp. It flew off with one ant still holding onto one of its legs. The rest of the ants collected the dead bodies.

I could not see any reason for this behaviour by the wasp; I wonder if any other members have ever noticed this behaviour with ants before? Did the wasp find the ants distasteful, if it tried to eat them, and if so, why kill so many?

I have had black ants in my garden for as long as I can remember. This year lots of Magpie moth (*Abraxas grossulariata*) larvae have fallen victim to them when crossing the path. But on 22nd July Mr Derek Heath and myself visited Doxey Marshes, Stafford. We were taking photographs of Cinnabar (*Tyria jacobaeae*) larvae when Derek’s camera tripod got covered with black ants which crawled up the tripod’s legs and onto us. A Cinnabar larva fell off a ragwort plant right into the middle of around thirty of the ants which swarmed onto it, but they did not kill it and it got away. Its toxins may have saved it. The rest of that afternoon we were itching and scratching — ants in our pants!

BOOK REVIEW

The illustrated encyclopedia of butterflies and moths by V.J. Stanek. Hardback 8vo, pp352, 420 coloured and monochrome illustrations, Promotional Reprints Co. Ltd., London 1992. Price £6.95.

Apart from the addition of *and moths* this book has the same title as that reviewed on page 256 of our last issue, and has priority of title over that work since it was published earlier, being a translation of yet another book originally published in Czechoslovakia. Its title of *encyclopedia* is, however, a complete misnomer since it is anything but that. It is a collection of not bad and often unusual photographs of a small selection of mostly large and colourful Lepidoptera; the butterflies with rather too many of set specimens, the moths with far more from living examples and both with examples of all stages in the life-cycle.

The book opens with a brief account of the biology of butterflies and moths and this is followed by 18 chapters named after the families they include, but while we will recognise "hawk-moths, eggars and prominents," other headings are of continental usage (as also is some of the nomenclature used) and will be unfamiliar. "The guild of knights" and "gnomes of the tropics" are respectively Papilionidae and Nemeobiidae. The butterflies occupy nearly half the book. The hawkmoths get a preponderance of the pages, a fifth of the book, 68 pages, being devoted to them with no less than 12 of these showing various views of the Death's-head hawkmoth while the Geometridae are dismissed by two examples and the enormous assemblage of the microlepidoptera with half a dozen. Hardly "encyclopedic"! Nevertheless a colourful book in an attractive cover and very reasonably priced. Quite a few of the specimens illustrated are likely to be seen in any of the Butterfly Houses and it should also appeal to the non-entomologist as a means to attract his or her interest in the subject and is quite suitable as a present for a youngster for the same reason.

Brian Gardiner

THREAT TO LOWLAND HEATHS

from *habitat*

England's dwindling lowland heaths are under threat from invading bracken, scrub and trees. Less than half the heathland that England contained in the 1930s exists today. Most has been lost to forestry, arable use or housing. Now the threat is too little management, allowing trees to spread over open heath. Alarmed at the prospect for wildlife, English Nature has initiated a National Lowland Heathland Programme. Because a unique range of fascinating and often rare plants and animals live there, English Nature will be providing £150,000 over three years in grants to support practical heathland management projects. Details from *Press Office, English Nature. Tel: 0733 234937.*

HYBRIDS BETWEEN *SATURNIA PAVONIA* AND *S. PYRI* (= *DAUBI*)

by M.A. Field (9718)

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My story starts in early April 1992. Due to a forthcoming move of house in midsummer, I had made a decision to synchronise the hatching of my stock of *Saturnia pavonia* and *S. pyri* to avoid the problem of looking after the larvae during the move. After securing adequate pairings of the two I had some surplus male *pavonia* and two unpaired female *pyri*. At this point in time I decided to see whether I could secure some hybrids and I obtained some interesting results. Firstly I set up my breeding cage which I use for *pavonia*. This cage is no more than a shortened fisherman's keep-net. Into this I placed the two virgin female *pyri* plus four male *pavonia*. On the outside of the cage I placed two female *pavonia* (to excite the males) and then hung the cage in the sunshine and kept a close watch. The *pavonia* males soon became active and began flying around inside the cage with the calling female *pavonias* on the outside of the cage. The males were attempting to pair with the female *pyri* almost immediately. Unfortunately, the female *pyri* did not have the same idea. They constantly dropped to the cage floor to avoid the males, but at the end of the afternoon, both of them had been paired, one twice. That night they began laying. The moths produced about approximately the same amount of ova as with normal pairings, but the female that had paired twice produced a batch of pure white ova, fifty-one in all, amongst her normal ova. These subsequently turned out to be the only ova to hatch from the entire two batches. Upon hatching, the young larvae were black, looking exactly like *pavonia*, but as they grew they began to look more like *pyri* larvae. However, when compared with *pyri* larvae they were distinctly odd. By the time the hybrids were half grown, and thereafter, they looked more like *pavonia* larvae but with the colours that were not as you would have expected. Held against *pavonia* larvae, they looked a dirty dark green with a black underside. The larvae stayed together, even when fully grown, often with several feeding together on the same branches, showing no sign of stress through crowding. In fact they were quite placid, more like gentle giants, for by now they had grown to a very large size, much larger than normal *pavonia* larvae. The entire batch were raised on a mixed diet of hawthorn, apple, damson and cotoneaster. Now cotoneaster may seem a strange choice of foodplant, but there is a thriving population of *pavonia* in my home town of Milton Keynes which are doing very well indeed on those planted along the road and in parks and estates. I was very interested to see whether or not my hybrids would eat it, which they did.

The larvae were kept at a constant 75-80°F, the same temperature at which I kept my pure-bred *pavonia* and *pyri* larvae. They reached full size before the *pyri* larvae and once again, seemed to be more in tune with their *pavonia* parentage.

I suffered the loss of only five larvae in their first instar. These just seemed to walk around until they dried up. The cocoons were made on the foodplants amongst the twigs, similar to *pavonia* cocoons but were larger, darker and harder and bore absolutely no resemblance to *pyri* cocoons whatsoever.

By the time spring arrived I found I had kept only 12 cocoons, having disposed of many others to fellow members. The males emerged first, in mid-April and even the smallest of them was larger than a female *pavonia*. They flew at night and readily paired with the typical *pavonia* females which, in the absence of any hybrid females, were the only ones available for them. At this point things went wrong; with seven pairings not one of the females laid more than a few ova (a bad sign) and only a fraction of these actually hatched, all but one of the larvae died and I ended up with but a single *daubi* x *pavonia* cocoon. The female hybrids, however, have decided to lay over for another year. I have not heard from those to whom I distributed cocoons as to whether their males also emerged, but not the females.

Unfortunately all but one of my photographs of the hybrids were stolen with my camera and the sole survivor of the male *daubi*, is shown on Plate MM, Fig. 7.

MASS HIBERNATION OF LACEWINGS IN GARDEN SHED

by Jan Koryszko (6089)

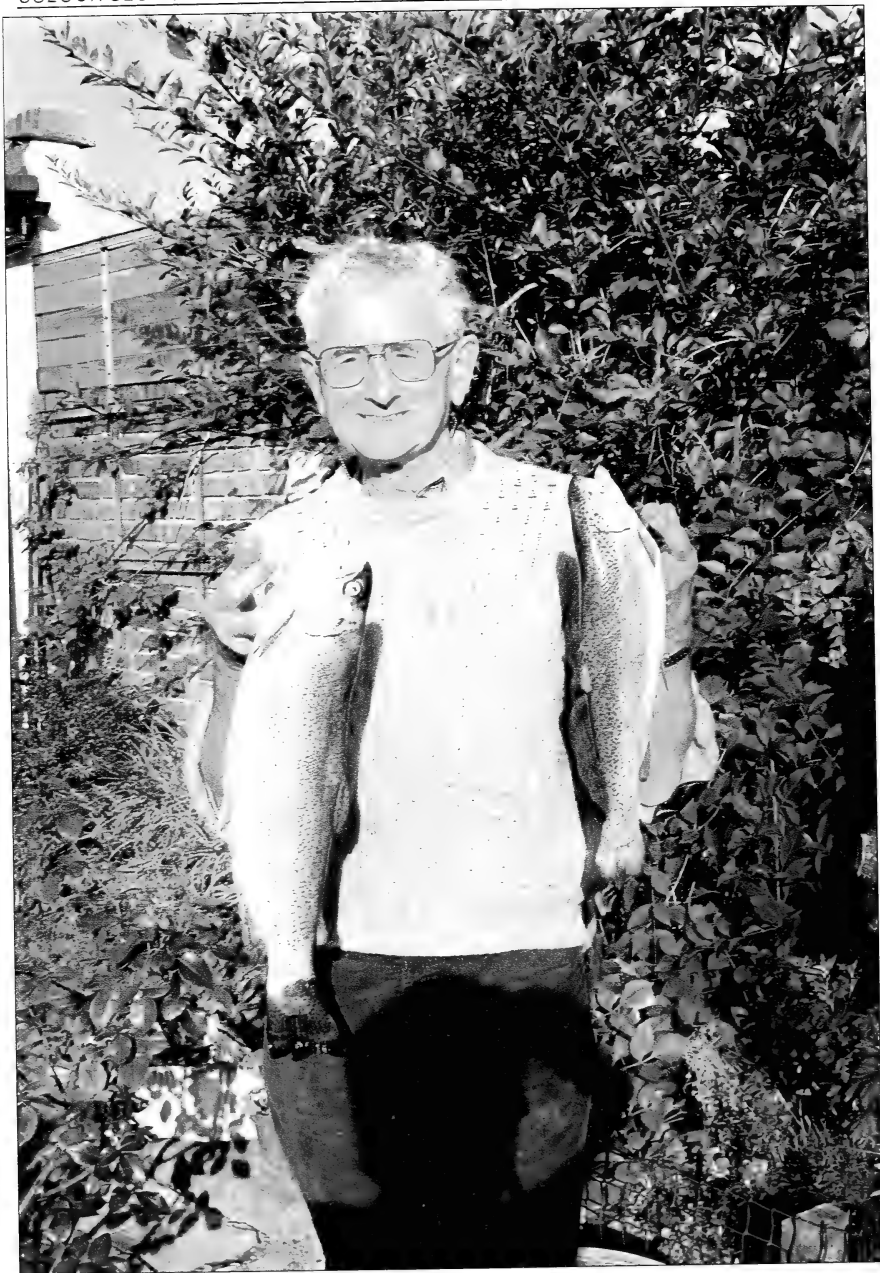
During the late summer of 1992, my friend Mr John Shaw was tidying out his garden shed. On moving a few piles of old polystyrene ceiling tiles Mr Shaw found around 300 to 350 Lacewings hibernating between the tiles and on the sides of the walls where the tiles had been stacked, so he replaced the tiles and left them to it.

I notice that this type of tile always seem quite warm to the touch and are of course intended to make good insulation. Maybe this is why the Lacewings chose this site for such a large hibernation cluster.

A few ladybirds were also seen. Mr Shaw also noticed that the Lacewings had been in small groups of between four and eight with their heads almost touching each other. Some of the groups were almost star shaped. I have had similar observations in my own loft at home. Maybe they sit head to head for protection against predators or to conserve heat. But a lot of singletons were also seen.



PETER WILLIAM CRIBB



PETER, ever a keen fisherman. (*Photo: Catherine Cribb*).



Fig. 1. The 13 year old son of the butterfly breeder at Binduyan
7.2.93



Fig. 2. The Cruiser, *Vindula dejone* at Binduyan, 7.2.93



Fig. 4. The Common jester, *Symbrenthia anna* at Mt. Makiling, 5.2.93



Fig. 3. The Common posy, *Drupalia ravindra* at Mt. Ibulurutan, 8.2.93



Fig. 6. The Common hedge blue, *Acytolepis puspa*, and *Jamides suidas* at Mt. Canlaon, 10.2.93



Fig. 5. *Zethera musides* at Mambucal, 11.2.93



Fig. 7. Male hybrid of *S. pavonia* x *S. pyri* = *daubi*.
Photo: J. Field



Fig. 8. Piggy-back: a fly on a burnet on a thistle flower.
Photo: R.H. Heath

PLATE MM



Fig. 9. Halved gynandromorph of the stick insect *Heteropteryx dilatata*.
Photo: Paul Brock

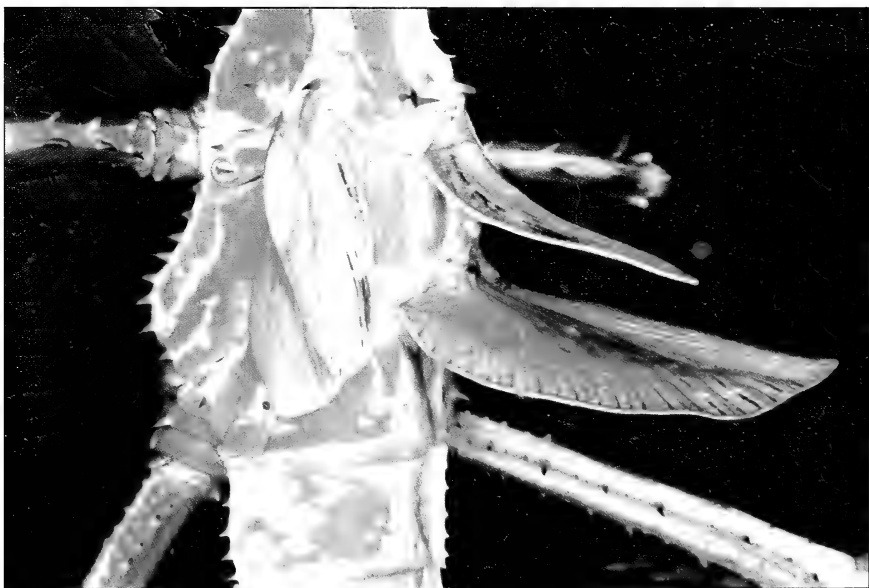


Fig. 10. Enlarged view of *H. dilatata* showing the differential wing sizes and colouring of the legs. Photo: Paul Brock

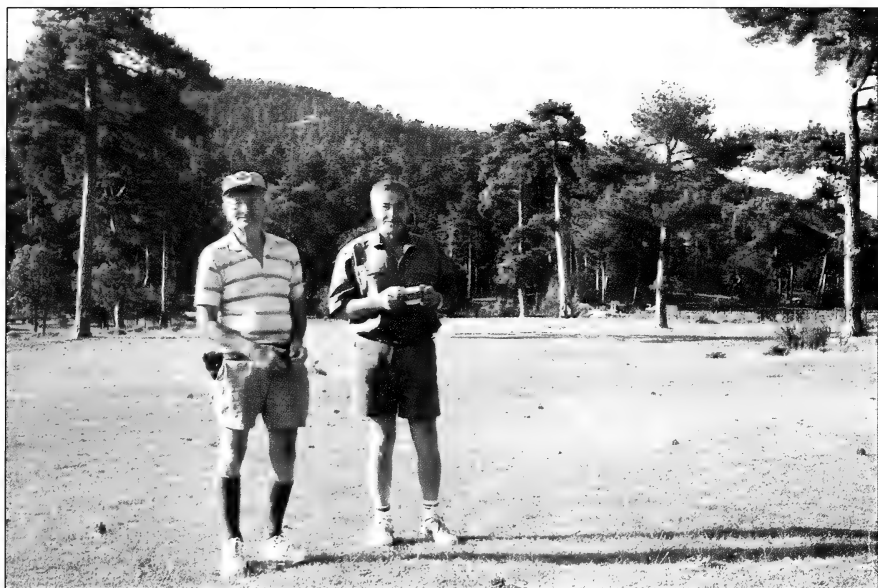


Fig. 1. Peter Cribb with Juan Font-Bustos at Muscardon, Montes Universales, Spain, July 1993. (Photo: David Marshall).



Fig. 2. Peter Cribb dressing a leg injury beside his faithful old Dodge Camper. (Photo: David Marshall).



A GYNANDROMORPH OF THE BRIMSTONE BUTTERFLY

by A.J. Egan

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On the 27th July 1992 I captured a specimen of the Brimstone butterfly (*Gonepteryx rhamni*) which was feeding on the flowers of a buddleia in the garden of a friend at Pelsall, West Midlands. It seemed rather unusual in appearance and on closer inspection turned out to be a gynandromorph, not halved, as is most usual, although rare in this species, but male on the forewings and female on the hindwings, with just a trace of male on one of the female hindwings. The specimen is illustrated above.

BUTTERFLIES IN PARADISE

by Peter B. Hardy (9436)

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The idea of a Philippines "Butterfly Tour" was first suggested in 1988 after I had visited the country with "Bill" Alborough of TEFS Travel Service, a special-interest tour-operator whose "Steam in Paradise" itinerary, arranged to see and photograph the steam locomotives which bring train-loads of sugar-cane from the cane-fields into the mills, has become an annual event. I recorded a number of butterflies during that 1988 trip and published a report in *Butterfly News* (Hardy, 1988), and on seeing a copy, Bill asked whether I would like to help him to run a tour specifically for butterfly enthusiasts.

After five years of planning and two false starts, our tour at last became a reality and on 30th January 1993 myself and three other butterfly enthusiasts left Gatwick for Manila. Bill Alborough and his family accompanied us thus far; then went our separate ways, he leading a railway party, and our group of lepidopterists continuing in the capable hands of Donald Garcia, the manager of the Manila based travel company Executive Resources Inc., and Bonifacio (Boni) Cayabyab, professor of entomology from the University of the Philippines at Los Banos, who between them had drawn up our itinerary and were to escort us throughout.

A day excursion to Angat watershed, Bulacan, was a fitting introduction, and we recorded numerous species along a track leading through secondary forest down to a dammed river, and some "puddling" on the banks. We were able to photograph many Pierids, Browns and Skippers, and some interesting Blues, although some of the more impressive butterflies just gave us tantalising glimpses as they flew past — such as a Birdwing, *Troides rhadamantus*, a Tree nymph, *Idea leuconoe*, or the beautiful violet-reflecting Satyrine *Ptychandra lorquinii*.

Then followed a three-day trip to Banaue, in north Luzon, the location of the famous rice-terraces. Although in most of the Philippines it was the dry season, this was not the case at Banaue, which meant that our long walk to Cambulo was in cloud and drizzle, and did not provide many butterflies; nevertheless it was a marvellous experience of trekking in the "Real" Philippines well away from commercial tourist areas. Cambulo is a remote village seven miles from any road and accessible only by hillside paths, the vegetation being a mixture of surviving forest and land cleared for agriculture, particularly rice-growing. We were made very welcome at the village, as indeed was our experience in all the remote places visited.

Because of the continuing adverse weather next day, we set off southwards earlier than planned, and instead made a stop at Consuelo forest park, Sante Fe, which was our best butterfly site during this three day excursion, with considerable numbers concentrated in a small space just inside the park.

Returning to Manila, we next made a day trip to Los Banos, where Boni showed us the University where he works, and we met the Director, Dr Medina. Boni showed us his butterfly house, a large netting cage in which several local species were breeding, particularly the Grass yellows (*Eurema* spp.). His two assistants gave us copies of a recent leaflet encouraging captive breeding of butterflies to develop public awareness of their intrinsic value and the need for their conservation. Adjacent to the University is Mt Makiling, a forested hill providing a splendid habitat mixture of woodland, rides and managed grassland.

The following morning we left Manila on a very early plane to Puerto Princesa, for three days in Palawan. This island probably has the best habitats in the Philippines, having a higher percentage of unspoilt forest and being largely protected. Its butterfly fauna has more affinities with that of Borneo than the other Philippine islands, and there are a number of endemic subspecies. It would no doubt have been wonderful to explore more into the interior of this beautiful island; nevertheless in the short time available we saw a variety of habitats, including streamsides, forested hills, clearings around villages, scrub areas adjacent to beaches; saw and photographed several interesting butterfly species. Rico Sanchez, a butterfly breeder who lives in Puerto Princesa, acted as our local guide in Palawan, and on the final day he showed us his butterfly house. We also visited another breeder at Binduyan, an ideal situation on top of a little hill above a rocky river, deep in the forest, where many species came down to drink. The thirteen year old son of the household helped us to photograph butterflies in the netting cage, then showed off his prowess with a net (Plate KK, Fig. 1). Seeing my disappointment at failing to get a successful photograph of a Malay lacewing *Cethosia hypsea*, which he had caught, he presented me with a dead, papered *C. hypsea* and an Autumn leaf, *Doleschallia bisaltide*. So as not to hurt his feelings, I accepted them, though they were not in keeping with the purpose of the expedition. Our primary aim was to observe and photograph live butterflies in natural habitats, and we had made it amply clear at the booking stage that "collecting" of specimens would be strictly forbidden. As with many South-east Asian countries, in the Philippines butterflies have come to be seen as a resource which can be exploited, as "westerners" will pay sometimes large sums to "collect" them, and there is much breeding of stock for sale (Anon., 1987; Cayabyab, 1988). The concept of butterfly conservation *per se* — recognising that these insects are living creatures which share this planet with us and have a

right to exist in their habitats, a concept which has made such excellent progress in Britain and Europe in recent years is not yet fully appreciated in South-east Asia. One of my aims in wanting to run this expedition was to show to those concerned my belief that there is a definite place for benign wildlife tourism, and for the study of Lepidoptera as part of an intact ecosystem, rather than as a commodity for trade. As with so many tropical lands, although the Philippines does contain many areas of very rich habitat, vast areas of the country have been degraded by man's activities and are largely entomologically sterile. It is vital, I feel, that we do everything possible to encourage preservation of species diversity.

Returning from Palawan, we had a couple of hours in Manila before the onward plane to Bacolod, on Negros. We did not waste this time: Donald and Boni took us to a park not far from the airport, where there were a few butterflies, albeit common ones, plus dragonflies. It was interesting to see caterpillars of the Leopard, *Phalanta phalanta*, on an ornamental tree in the park. Close by the aerodrome boundary, I found a remarkable little Skipper, greyish-blue in colour; looking at plate 184 in Lewis (1974) I believe it may be *Aeromachus plumbeola*, but as with many of the Hesperiiids I cannot be one hundred per cent certain. Unfortunately D'Abrera (1984-86) doesn't include this family in his monumental works, which have been my main reference for identification, as there is no guide-book specifically on butterflies of the Philippines.

We had two objectives on Negros, Mt Canlaon National Park and Mambucal. For the first (a forest park beneath an active volcano), we made a very early start anticipating a long and interesting day. It was however somewhat of an anticlimax, as although the first site where we tried was fairly good, with several Danaiids and other forest species, plus a number of Blues and *Graphium* species mud-puddling, we failed to find anywhere else of much value, and the park warden, though very hospitable, appeared unable to advise us, and accordingly we returned to Bacolod somewhat early. Here again, on looking at the very impressive list of potential species for Mt Canlaon, I have a feeling that our aims were not fully understood.

Mambucal, where we went the following day, was already known to me as I had visited it in 1988. Chris Garzon, whom I had met then, was our guide, and showed us several sites including the rocky valley up which it is possible to walk to a waterfall, and which forms a splendid habitat, though we didn't really have time to do it justice. Particularly impressive here was a huge black and white Satyrine *Zethenia musides*, which sat obligingly in the lower branches of a tree; a magnificent brown *Euthalia alpheda* was less co-operative. Swarms of Common lineblues, *Prosotas nora*, were around a small tree beside a drinks stall; and the

abundance of shade-loving Satyrines (the Dark-brand and Common bushbrowns, *Mycalesis mineus* and *M. perseus*, and the Nigger, *Orsotriaena medus*) in the grass under the trees was quite amazing. We returned to Manila in the evening.

Our final day in the Philippines was a tourist-type excursion to Tagaytay, along with the railway group, to view the volcano within a lake. Not many butterflies were seen that day, apart from the ubiquitous Lesser grass blue, *Zizina otis*, but it was nevertheless enjoyable — especially as my Filipina pen-friend of the last five years, Grace Abejuela, accompanied us.

Acknowledgements: I wish to thank everyone who made this expedition possible, especially G.W. (Bill) Alborough of TEFS Travel Service, Donald Garcia of Executive Resources, and Bonifacio Cayabyab of the University of the Philippines at Los Banos. It was far more than just a "Butterfly Tour". Some of our party were interested in the dragonflies, and other wildlife particularly birds, and our leaders were very accommodating. We were given an insight into the true character of the country, behind its "tourist" facade; and its geography, history and culture. We felt that we had had a *Real Adventure*.

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SPECIES LIST

Species marked with an asterisk* are illustrated on colour plates KK and LL.
 All photographs are by the author.

31.1.93 — verge of Roxas Boulevard, Manila

<i>Appias libythea</i>	Striped albatross	<i>Ptychandra lorquinii</i>	
<i>Leptosia nina</i>	Psyche	<i>Mycalesis ita</i>	
<i>Zizeeria karsandra</i>	Dark grass blue	<i>Mycalesis mineus</i>	Dark-brand bushbrown
<i>Potanthus omaha</i>	Lesser dart	<i>Mycalesis perseus</i>	Common bushbrown
		<i>Mycalesis tagala?</i>	

1.2.93 - Angat

<i>Troides rhodamanthus</i>	A birdwing	<i>Zethenia pimplea</i>	
<i>Papilio rumanzovia</i>	Red mormon	<i>Faunis phaon</i>	
<i>Delias pasithoe</i>	Red-base jezebel	<i>Cupha arias</i>	
<i>Appias libythea</i>	Striped albatross	<i>Precis hedonia</i>	
<i>Appias lyncida</i>	Chocolate albatross	<i>Lasippa illigera</i>	
<i>Appias nero</i>	Orange albatross	<i>Pantoporia dama</i>	
<i>Appias albina</i>	Common albatross	<i>Tanaecia godartii</i>	
		<i>Hypolimnys bolina</i>	Great eggfly
		<i>Abisara echerius</i>	Plum judy

<i>Cepora boisduvaliana</i>		<i>Jamides philatus</i>	
<i>Catopsilia pomona</i>	Lemon emmigrant	<i>Celarchus hermachus</i>	
<i>Eurema hecabe</i>	Common grass yellow	<i>Chilades lajus</i>	Lime blue
<i>Gandaca harina</i>	Tree yellow	<i>Celastrina algeronia</i>	
<i>Leptosia nina</i>	Psyche	<i>Tagiades (gana?)</i>	(Large?) snow flat
<i>Parantica vitrina</i>		<i>Oriens gola</i>	Common dartlet
<i>Idea leuconoe</i>	Tree nymph	<i>Potanthus omaha</i>	Lesser dart
<i>Ypthima pandocus</i>	Looped three-ring	<i>Telicota augias</i>	Pale palm dart
<i>Ypthima stelleri</i>	(Common) five-ring	<i>Caltois philippina?</i>	

2.2.93 — None

3.2.93 — walk from Kinakin to Cambulo

<i>Pieris canidia?</i>	Indian cabbage white?	<i>Ypthima stelleri</i>	
<i>Danaus chrysippus</i>	Plain tiger	<i>Precis orithya</i>	Blue pansy
<i>Mycalesis ita</i>		<i>Lampides boeticus</i>	Pea blue
<i>Mycalesis (sp.)</i>		<i>Zizina otis</i>	Lesser grass blue
(form of <i>mineus</i> ?)		<i>Potanthus omaha</i>	Lesser dart

4.2.93 — mostly at Santa Fe, also riverside stop; some at Banaue

<i>Papilio rumanzovia</i>	Red mormon	<i>Pantoporia dama</i>	
<i>Graphium agamemnon</i>	Tailed jay	<i>Cethosia (biblis?)</i>	(Red?) lacewing
<i>Eurema hecabe</i>	Common grass yellow	<i>Melanitis leda</i>	Common evening brown
<i>Delias pasithoe</i>	Red-base jezebel		Common five ring
(at Banaue)		<i>Ypthima stelleri</i>	(large Geometrid moth)
<i>Catopsilia scylla</i>	Orange emmigrant	<i>Canucha specularis</i>	
<i>Catopsilia pomona</i>	Lemon emmigrant	(Banaue)	(moth formerly classified
<i>Pareronia boebersi</i>		<i>Nyctimera baulus</i>	in Hypsididae, now in
<i>Mycalesis perseus</i>	Common bushbrown	(Banaue)	sub-family Aganinae of
<i>Tirumala limniace</i>	Blue tiger		Noctuidae)
<i>Euploea (mulciber?)</i>	(Striped blue) crow		

5.2.93 — Los Banos and Mt. Makiling

<i>Papilio rumanzovia</i>	Red mormon	<i>Ypthima pandocus</i>	Looped three-ring
<i>Papilio palinurus</i>	Banded peacock	<i>Precis hedonia</i>	
<i>Appias albina</i>	Common albatross	<i>*Symbrenthia anna</i>	Common jester
<i>Appias lycinda</i>	Chocolate albatross	<i>Neptis (large sp.)</i>	
<i>Hebomoia glaucippe</i>	Great orange-tip	<i>Allotinus albatrus</i>	Common darkie
<i>Leptosia nina</i>	Psyche	<i>Pithecopus corvus</i>	Forest quaker
<i>Eurema blanda</i>	Three-spot grass yellow	<i>Jamides cleodius</i>	White celurian
<i>Eurema sarilata</i>		<i>Tagaides japedus</i>	Common snow flat
<i>Eurema hecabe?</i>	Common grass yellow?	<i>Sancus fuligo</i>	Coon
<i>Parantica vitrina</i>		<i>Koruthaialos sindu</i>	Bright red velvet bob
<i>Zethenia pimplea</i>		<i>Notocrypta paralysos</i>	Common banded demon
<i>Mycalesis ita</i>		<i>Oriens gola</i>	Common dartlet
<i>Mycalesis mineus</i>	Dark-brand bushbrown	(2 unidentified Hesperids)	
<i>Mycalesis perseus</i>	Common bushbrown	<i>Nyctemera radiata</i>	"Hypsid" moth —
<i>Ypthima stelleri</i>	Common five-ring		see note above, 4.2.

6.2.93—Balsahan (Iwahig) (also hotel, Puerto Princesa where noted).

<i>Papilio helenus</i>	Red helen	<i>Euploea</i> (sp.)	(small, purple)
<i>Papilio lowi</i>		<i>Ypthima pandocus</i>	Looped three-ring
<i>Papilio polytes</i>	Common mormon	(<i>aquillus</i>)	
<i>Papilio palinurus</i>	Banded peacock	<i>Mycalesis</i> (<i>mineus</i> ?)	(Dark-brand?)
<i>Graphium doson</i>	Common jay		bushbrown
<i>Pareronia valeria</i>	Wanderer	<i>Cirrochroa tyche</i>	Common yeoman
<i>Cepora iudith</i>	Orange gull	<i>Chersonesia rahria</i>	Wavy maplet
<i>Cepora boisduvaliana</i>		<i>Cyrestis maenalis</i>	
<i>Appias albina</i>	Common albatross	<i>Precis hedonia</i>	
<i>Appias nero</i>	Orange albatross	<i>Precis orithya</i>	Blue pansy
<i>Appias lyncida</i>	Chocolate albatross	<i>Neptis</i> (sp.)	
<i>Eurema (blanda?)</i>	(Three spot?)	<i>Parthenos sylvia</i>	Clipper
	grass yellow	<i>Zizina otis</i>	Lesser grass blue
<i>Eurema hecabe</i>	Common grass yellow	<i>Euchrysops cnejus</i>	Gram blue
(at hotel)		<i>Catochrysops strabo</i>	Forget-me-not
<i>Danaus melanippus</i>	White tiger	<i>Potanthus omaha</i>	Lesser dart
<i>Danaus chrysippus</i>	Plain tiger	(at hotel)	
(at hotel)		<i>Telicota</i> (sp.) (at hotel)	

7.2.93—Binduyan (including at butterfly breeder's house)

<i>Papilio lowi</i>		<i>Ideopsis juvena</i>	
<i>Papilio palinurus</i>	Banded peacock	<i>Euploea swainson</i>	
<i>Papilio polytes</i>	Common mormon	<i>Lethe europa</i>	Bamboo treebrown
<i>Troides plateni</i>		<i>Ypthima pandocus</i>	Looped three-ring
<i>Pachliopta atropos</i>		<i>Mycalesis</i> (sp.)	
<i>Graphium sarpedon</i>	Common bluebottle	<i>*Vindula dejone</i>	Cruiser
<i>Cepora iudith</i>	Orange gull	<i>Precis hedonia</i>	
<i>Appias albina</i>	Chocolate albatross	<i>Neptis</i> (sp.)	
<i>Appias nero</i>	Orange albatross	<i>Cethosia hypsea</i>	Malay lacewing
<i>Appias libythea</i>		<i>Cirrochroa tyche</i>	Common yeoman
and/or <i>lyncida</i>		<i>Allotinus albatus</i>	
<i>Eurema</i> (sp.)		<i>Jamides</i> (<i>cleodius</i> ?)	(White?) celurian
<i>Hebomoia glaucippe</i>	Great orange-tip	<i>Everes lacturnus</i>	Indian cupid
<i>Pareronia valeria</i>	Wanderer	<i>Zizina otis</i>	Lesser grass blue
<i>Danaus genutia</i>	Common tiger	<i>Telicota</i> (sp.)	

8.2.93—BM Beach (St. Pedro); Irwan (Mt. Ibulurutan); Rico Sanchez's house (Puerto Princesa)

<i>Papilio lowi</i>		<i>Elymnias panthera</i>	
<i>Papilio demoleus</i>	Lime	<i>Precis hedonia</i>	
<i>Papilio polytes</i>	Common mormon	<i>Neptis hylas</i>	Common sailor
<i>Pachliopta atropos</i>		<i>Cyrestis maenalis</i>	
<i>Cepora iudith</i>	Orange gull	<i>Lampides boeticus</i>	Pea blue
<i>Appias albina</i>	Common albatross	<i>Jamides</i> (sp.)	
<i>Appias nero</i>	Orange albatross	<i>Euchrysops cnejus</i>	Gram blue
<i>Eurema</i> (sp.)		<i>Catochrysops strabo</i>	Forget-me-not
<i>Hebomoia glaucippe</i>	Great orange-tip	<i>Zizina otis</i>	Lesser grass blue
<i>Pareronia valeria</i>	Wanderer	<i>Pitheops corvus</i>	Forest quaker
<i>Danaus chrysippus</i>	Plain tiger	<i>*Drupalia ravindra</i>	Common posy
<i>Ideopsis juvena</i>		<i>Horaga albimacula</i>	
<i>Cethosia hypsea</i>	Malay lacewing	<i>Notocrypta paralysos</i>	Common banded demon
<i>Ypthima stelleria</i>	(Common) five-ring		
<i>Orsotriaena medus</i>	Nigger	<i>Oriens gola</i>	Common dartlet

9.2.93— Park in Manila

<i>Papilio demoleus</i>	Lime	<i>Zizina otis</i>	Lesser grass blue
<i>Leptosia nia</i>	Psyche	<i>Aeromachus</i>	
<i>Eurema hecabe</i>	Common grass yellow	<i>plumbeola?</i>	
<i>Phalanta phalantha</i> (larvae)	Leopard		

10.2.93—Mt. Canlaon (and Bacolod in evening)

<i>Graphium sarpedon</i>	Common bluebottle	<i>Neptis (cyra?)</i>	
<i>Appias albina</i>	Common albatross	<i>Ideopsis juvena</i>	
<i>Eurema hecabe</i>	Common grass yellow	<i>Lampides boeticus</i>	Peablu
<i>Catopsilia pomona</i>	Lemon emigrant	<i>*Acytolepis puspa</i>	Common hedge blue
<i>Precis almana</i>	Peacock pansy	<i>Prosotas nora</i>	Common lineblue
<i>Precis orithya</i>	Blue pansy	<i>*Jamides sudas</i>	
<i>Mycalesis mineus</i>	Dark-brand bushbrown	<i>Catochrysops strabo</i>	Forget-me-not
<i>Mycalesis perseus</i>	Common bushbrown	<i>Euchrysops cnejus</i>	Gram blue
<i>Melanitis leda</i>	Common evening brown	<i>Zizina otis</i>	Lesser grass blue
<i>Orsotriaena medus</i>	Nigger	<i>Potanthus (sp.)</i> (Bacolod)	

11.2.93—Mambucal (and Bacolod in late afternoon)

<i>Papilio polytes</i>	Common mormon	<i>Precis almana</i>	Peacock pansy
<i>Graphium sarpedon</i>	Common bluebottle	<i>Cethosia (hypsea?)</i>	(Malay?) lacewing
<i>Graphium agamemnon</i>	Tailed jay	<i>Symbrenthia anna</i>	Common jester
<i>Cepora boisduvaliana</i>		<i>Neptis mindorana</i>	
<i>Catopsilia pomona</i>	Lemon emigrant	<i>Phaedyra columella?</i>	Short-banded sailor?
<i>Catopsilia scylla</i>	Orange emigrant	<i>Euthalia alpheda</i>	
<i>Gandaca harina</i>	Tree yellow	<i>Jamides (sp.)</i>	
<i>Ideopsis juvena</i>		<i>Prosotas nora</i>	Common lineblue
<i>Parantica (vitrina?)</i>		<i>Nacaduba (kurava?)</i>	(Transparent?) six-lineblue
<i>Euploea (mulciber?)</i>	(Striped blue?) crow		
<i>Mycalesis mineus</i>	Long-brand bushbrown	<i>Lampides boeticus</i>	Pea blue
<i>Mycalesis perseus</i>	Common bushbrown	<i>Euchrysops cnejus</i>	Gram blue
<i>Orsotriaena medus</i>	Nigger	<i>Catochrysops strabo</i>	Forget-me-not
<i>*Zethenia musides</i>		<i>Zizina otis</i> (Bacolod)	Lesser grass blue
<i>Phalanta phalantha</i>	Leopard	<i>Potanthus omaha</i>	Lesser dart
<i>Cirrochroa tyche</i>	Common Yeoman		

12.2.93—Tagaytay

<i>Cyrestis maenalis</i>	
<i>Catopsilia (sp.)</i>	
<i>Ypthima stellera</i>	
<i>Zizina otis</i>	Lesser grass blue
<i>Nyctemera (sp.)</i>	(<i>Hypsid</i> moth, dead, in spider's web)

BOOK REVIEW

Tachinid Flies, Diptera Tachinidae by Robert Belshaw. Pp169, 440 Figs. A5 paperback. *Handbooks for the Identification of British Insects* Vol. 10, part 4a (1), Royal Entomological Society 1993. ISBN 0 901546 81 X. Price £20.00 (£14 to Fellows); (post £3).

This volume has been eagerly awaited by Dipterists, as it is thirty-nine years since its predecessor was produced by van Emden, and, since then, there have been many changes in nomenclature and a number of species added to the British list.

The book is divided into five main sections: systematics, family biology, species biology, identification and a check list.

Systematically, the author follows the classification of Herting (Herting B. 1960. *Biologie der westpaläarktischen Raupenfliegen* (Dipt., Tachinidae). *Monographien zur Angewandten Entomologie* 16: 1-188.), dividing the family into four sub-families; Exoristinae, Tachininae, Dexiinae and Phasiinae, and gives keys for the separation of the other families of the Oestroidea, namely Calliphoridae, Sarcophagidae, Oestridae and Rhinophoridae, which were included as sub-families by van Emden.

The section on family biology deals with the various methods used by the parasitoid female in locating the host and depositing ova on it or in its vicinity. The diverse forms of ova, containing larvae in different stages of incubation, and the ways used by the first instar larva in obtaining entry into the body of the host, are discussed. The development of the larva through its three instars and its interaction with the host, its methods of respiration and feeding, and finally its pupation in or, more commonly, outside the body of the host are followed.

In the species biology section various biological details are given, including the method of egg-laying, if known, and a quantitative list of host records. Also noted are habitat, British distribution and flight period, and an indication of scarcity or otherwise is shown by the number of records grouped together as a single figure.

The section on identification commences with instructions for the preparation of the fly for examination, including the extraction of the genitalia where this is necessary. The keys are in the usual form of contrasting couplets and are accompanied by very clear diagrams, adjacent to the couplets, in which the features under comparison are indicated by arrows. Some changes from van Emden's terminology are made in the naming of the thoracic sclerites, the humeral lobe becoming the postpronotal lobe and the sternopleural sclerite becoming the katepisternum. Photographs of the distiphalli of ten species of the difficult genus *Siphona*, and also diagrams of the male genitalia of other

critical species are given. In a trial on some dozen species the keys worked very well and, if the author's instructions and warnings are heeded, should serve to produce an accurate determination.

A check list giving all the generic and specific names used in the British literature since Wainwright's 1928 publication completes the work. The publishers have produced a handbook of high quality which is excellent value for money, and will be of great usefulness to students of this interesting and economically important family.

T.H. Ford

DIPTERA OBSERVATION

by Jan Koryszko (6089)

3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire ST3 7AY.

In July 1992 my friend Mr Derek Heath was taking photographs at Cresswell Piece, Staffordshire. He was photographing a Narrow-bordered five-spot burnet (*Zygaena lonicerae latomarginata*), when a fly kept landing on the moth's back. The burnet then flicked it away with its wings, but the fly just kept coming back to do the same thing, so Mr Heath photographed this incident. This fly may have been a parasitic species, possibly of the family Tachinidae, but why keep landing on the moth? It seemed to be hitching a ride on the moth's back. Mr Heath's photograph of this unusual occurrence is shown on Plate MM, Fig. 8.

Many years ago I once found two Herald moths (*Scoliopteryx libatrix*) hibernating in an old air raid shelter with a common gnat (*Culex pipiens*) sitting on the back of each of them, which also hibernated in the shelter. Was this behaviour a coincidence or was it done to protect themselves from possible predators and did the fly on the burnet use the moth for protection?

I notice that both the burnet and the Herald moth have red coloration; the Herald more or less reddish-tinged throughout and the burnet with its striking red markings. Red is a warning colour in nature either as a flash of red on the wings when disturbed, or to warn that its owner is distasteful to a predator. But maybe these two observations have been coincidental.

A HALVED GYNANDROMORPH OF THE STICK INSECT *HETEROPTERYX DILATATA*

by Paul Brock (4792)

"Papillon", 40 Thorndike Road, Slough, Berks SL2 1SR.

Two views of the last instar nymph of the Jungle nymph which I reared from my culture stock of this insect in 1993 are shown on Plate NN, Figs. 9 and 10. Unfortunately this West Malaysian species died when attempting its final moult. Further information on gynandromorphism in this species is given in my article in *Bulletin* 48: 207-211.

CORRECTION TO TYPOGRAPHICAL ERRORS IN DECEMBER BULLETIN

Some typographical errors unfortunately crept into the December last issue of the *Bulletin*. These occurred in James Wright's article *Take note of the Humble Spider*, mainly on page 265, and amendments should be made as follows:-

In paragraph 3, whenever (Clerk) read (Clerck), also on Plates HH, II and JJ; for *Lariniodes* read *Larinioides*, also on Plate JJ, Fig. 7; On the last line of this paragraph, the comment "... species stretched out at rest and perhaps looking more a stick insect than a spider!" should have followed "Fig. 6. A female *Tetragnatha extensa* (L.)" and **not** Fig. 8, *Tegenaria*.

THE EXPEDITION ADVISORY CENTRE AND ITS SERVICES

The Expedition Advisory Centre provides information, training and encouragement to anybody planning an overseas expedition. The Centre's primary focus is expedition research at undergraduate level, in keeping with the Royal Geographical Society's aim of improving and disseminating geographical knowledge. Using the EAC, hundreds of such expeditions leave Britain every year, making an important contribution to the personal development of the individuals involved, and to global environmental knowledge and understanding.

If you are planning an expedition, you are welcome to seek further information from us, either by writing (enclosing details of your expedition) or arrange a time to visit the Centre (by appointment only, please). The Expedition Advisory Centre is open 10am to 5pm, Mondays to Fridays.

Expedition Advisory Centre, Royal Geographical Society, 1 Kensington Gore, London SW7 2AR. Fax: 071-584 4447, Tel: 071-581 2057.

HOVERFLY BOOK AGAIN AVAILABLE

The British Entomological and Natural History Society is pleased to announce that its very successful book *British hoverflies: an illustrated identification guide* by A.E. Stubbs and S.J. Falk is now available again after being out of print for two years. Since its original publication in 1983, this book remains the definitive guide to the British hoverfly fauna, and with over 190 species being illustrated on the 12 spectacular colour plates it is also one of the most attractive. A 16-page supplement was added in 1986. Hardback copies are available at £26.00 each, plus £2.80 postage and packing (£3.50 overseas), from the Sales Secretary, R.D. Hawkins, 30d Meadowcroft Close, Horley, Surrey RH6 9EL. The BENHS is a registered charity, number 213149.

OBSERVATIONS CONCERNING THE SCARLET DARTER (*CROCOTHEMIS ERYTHRAEA*: ODONATA) IN ZURICH, SWITZERLAND

by John Hay (6878)

336 Glasgow Road, Ralston, Paisley, PA1 3BH, Scotland.

Whilst on a business trip to Switzerland, I happened to find myself in Zurich on Thursday 27th May 1993. At about 3.30pm, the wind was imperceptible and it was very warm. I took to the open air and came to rest in Belvoir Park, which is south of the city-centre and west of the Zurich-See, on the main road to Luzern and Chur. This fairly small but very aesthetically pleasing park contains an abundant flora and two ponds, one with well aerated water containing a fountain and plethora of aquatic vegetation around the edges, and the other comprising of stagnant water, shaded by overhanging tree branches.

There was copious insect activity on, around and above the non-stagnant pond at the edge of which I was seated. I soon became aware of a considerable number of dragonflies in this vicinity; I was able to identify the bright red tapered abdomen characteristic of adult males of the Scarlet darter (*Crocothemis erythraea*, Brulle 1832, Family Libellulidae), often accompanied by a female with olive-yellow abdomen. Although fairly common in middle and southern Europe, as well as areas of Africa and Asia (d'Aguilar *et al*, 1986), this anisopteran dragonfly is recorded in the UK only in Jersey. (Hammond 1983).

As a consequence of my presence in Belvoir Park at this time, I was able to add two observations to my collection of dragonfly memorabilia.

First, a pair of insects were observed to mate on the wing for a very brief period (seconds) before parting, the female quickly making for the edge of the pond whilst the male remained in the immediate vicinity, with tapered abdomen pointing upwards, and wings shading the thorax. The female circled an area of about six metres for oviposition, then moved off, followed by the male. He had been some two metres from me and I was able to observe the very characteristic bright-red and orange-brown coloured pterostigma enclosed by black wing veins; the hind wings were about 30mm in length and he was about 40mm long.

Secondly, a solitary adult male approached at speed about 10cm above the surface of the pond, pulled up abruptly and alighted on the upper surface of an iris leaf in order to capture a "resting" hymenopteran (wasp?, hoverfly?). The Scarlet darter, like other dragonflies, is a generalised, obligate carnivore. My observation of capture of resting prey is apparently less often observed, although not necessarily uncommon, than feeding in flight, where the anatomical features of the legs (St Quentin, 1953) and thoracic segments of the dragonfly are specialised for aerial predation (Corbet, 1962).

These events occurred in one spot over a period of about forty minutes. It was unfortunate that pressure of work precluded investigation of larval activity in the pond; I had an appointment in Basel that evening, and so reluctantly I had to bid auf Wiedersehen to die Feuerlibelle (Jurzitza, 1978), which had provided me with such relaxation and pleasure on an all too brief interlude between meetings.

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PROTECTED BUTTERFLY COLONY TO BE DESTROYED

from *habitat*

A major colony of rare and endangered Marsh fritillary is to be destroyed by opencast mining operations in Glamorgan, South Wales. The public enquiry of British Coal's opencast planning application at the Parc Slip west site returned a verdict at the end of September in favour of British Coal. *Butterfly Conservation*, a national charity dedicated to conserving wild butterflies and their habitats, strongly opposed this development at the public enquiry because the site is known to support a thriving colony of the Marsh fritillary, a declining species that is threatened throughout Europe. The range of the species in the UK has declined over 62% and colonies are currently disappearing by 11.5% per decade. Further information from *Gary Roberts*. Tel: 0844 274648.

DEMI-JOHN'S AS BREEDING CYLINDERS FOR MANTIDS ETC.

by *Gary Symes (10071)*

Second-hand demi-johns can be purchased from DIY wine-making shops at around £1.00 or may be bought cheaper at boot sales. These can be modified to act as very good containers for breeding. The demi-john is secured by plasticine or similar medium to the centre of a record-player disc. A fine blow lamp torch or pen torch is used to heat the line at which you wish to make the cut. Rotate the disc at maximum speed and aim the torch point at the line of cut for about three minutes. Then touch the heated area of the glass with a cold spoon. The glass will crack cleanly round the container and the top is then removed. The rough edge of the glass can then be smoothed using a good emery paper. I hope this idea will be of use to other members.

THE FIREBUG (*PYRRHOCORIS APTERUS*: HEMIPERA-HETEROPTERA) IN BERLIN, GERMANY

by John Hay (6878)

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On Sunday 1st August 1993, at about 2.00pm, it was warm (70°F), windless and sunny in Berlin. At this time, I was on an excursion to the world-famous Pergamon-Museum, located in the East of the recently reunited city; I was keen to view the Ishtar Gate and the processional way of Ancient Babylon, built during the reign of King Nebuchadnezzar II (604-562 B.C.). My first visit here was to be the culmination of a hectic week after attending the 9th International Congress of Protozoology, held in Berlin's magnificent International Congress Centre, located on the west side of the city, not far from the Olympic Stadium and an entomologist's paradise, the Grunewald Forest.

Whilst strolling along Unter den Linden (under the limes), the historic processional way which links the Brandenburg Gate and my goal at the Museuminsel, my attention was directed towards an assembly of some 50 to 70 red and black hemipterans located on the lower aspect of a sun-exposed lime (*Tilia* sp.) tree. Closer inspection revealed that the insects were firebugs (*Pyrrhocoris apterus*, Linnaeus: family Pyrrhocoridae); they ranged in length from about 8 to 12mm. Interestingly, Butler (1923) recorded a report by Westwood from Berlin in September 1835, who observed that the species was extremely abundant, feeding on berries and seeds.

In the UK, the only host plant of the firebug appears to be the tree mallow (*Lavatera arborea*); the species has been recorded usually in certain coastal areas of England, Wales and the Channel Islands; a well-studied colony is located on the rocky islet of Oreston at the entrance of Torbay (Dolling, 1991)

A description of the insect is provided by, for example, Saunders (1892) and since it has been a fairly extensively studied bug, many references are available concerning its anatomy, development and aspects of its ecology (Southwood & Leston, 1959).

The firebug has a very conspicuous scarlet and black coloration, the distribution of which is likely to act as a warning pattern to potential predators. Handling of the insect, with gentle pressure on the abdomen, did not generate any obvious odour. Despite its prominent markings, the firebug appears to be regularly predated upon by birds, amphibians and other insects. It has been reported to be a predator, feeding on live aphids, although this has been the subject of some controversy, since it has been suggested by Hausman (recorded in Butler, 1923) that the firebug has a partiality for dead insects only, exhibiting no interest in

living ones. Casual observation of the "Berlin group" of firebugs showed that at least two members were carnivorous, one actually seen preying on an aphid, probably *Therioaphis tiliae*; the latter were present in considerable numbers on the younger shoots of the lime tree.

All members of the "colony" were adults. None of the insects were pairing, a process which can apparently last for three or four days!

Inspection of randomly selected insects with a handlens and pencil-tip indicated that they were macropterous, suggesting they had undergone four moults.

After collecting some dead firebugs from the foliage at the base of the lime tree, in order to examine them at a later date for the presence of internal protozoan and helminth parasites, I suddenly became aware that my antics were the source of some amusement to passers-by, and so I hastily made my way, insects in envelope, to the museum. On the way, I reflected on what the East Berlin authorities might have thought of my entomological activities prior to 9th November 1989, the date when the Berlin Wall opened and the so-called Cold War ended (Smith, 1990).

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THREE BUTTERFLIES

African Migrant
 Green, yellow, opaque,
 Awakened, They call you stranger
 And thick bodied
 I sit in the sun
 With my wife and son
 And watch happiness run in your
 powerful flight.

BROWN

First flight for me,
 Woody, the scent of spring
 Or is it summer this year?
 A different time
 For me
 Copsed and settled
 The lawnmower shrieks next door
 and you float away.

ORANGE TIP

Tangerine dream
 We stumbled like fools on the hill
 Minds in confusion
 Tongues swept
 We walked the narrow road
 You screamed across the rushes
 Orange tip.

Peter Todd.

SALES OF THE UNEXPECTED

by Chris Gardiner (5249)

15 Castle Rise, Belmesthorpe, Stamford.

The January sales are under way in Stockport; I spend the morning window-shopping rather than hunting down bargains. As I walk down an unfamiliar street, an assortment of shops — furniture restorer, dance clothes, second-hand records — gradually peter out and merge into a red brick residential terrace. Nothing more there, time to retrace my steps and find some lunch. I pass the record shop again and my attention is caught momentarily by a small display of antique gramophones. My idle reverie is suddenly broken by something completely unexpected. I am staring at the eight inch leg span of a gigantic spider. It is pinned precariously inside a wooden storebox, whose lid is propped open against one of the old gramophones. A neat red legend stuck inside reads: "FOR SALE. 75 BOXES OF SIMILAR ENTOMOLOGICAL SPECIMENS AND EQUIPMENT. ENQUIRIES IN SHOP." The pulse quickens. I am halfway to the door before I notice the second box nearby, strangely camouflaged almost, by the lurid lettering and illustrations adorning the record sleeves in the window display. I study the contents of the box for a few moments. It contains a motley assortment of British, European, and exotic Lepidoptera. Nothing too exciting, no Large coppers tucked away in the corner. Still, there's no harm in enquiring.

The shop is quiet as I enter, just a couple of customers leafing through the record racks. I express my interest to the owner. He seems slightly surprised that someone should have come in so quickly. It's only been in the window for a week, he explains. The collection belonged to his father, who died some years before. It's been gathering dust at his mother's house ever since, and now he's selling it on her behalf. My interest begins to subside as I glean more details of the collection: rather a mixed bag by the sound of it, and in fairly poor shape. My professionally interested tone lapses into the merely conversational.

"What was your father's name?" I enquire.

"I suppose you may have heard of him" says the man modestly. "It's rather an unusual name really: Kloet."

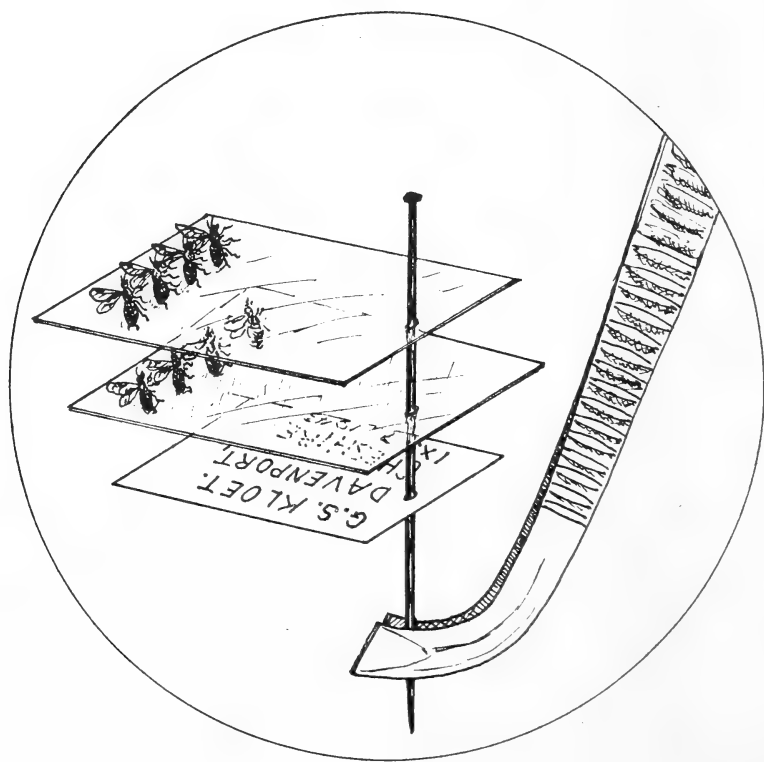
I stand momentarily transfixed with surprise whilst he spells out — quite unnecessarily — the letters of his surname: George Kloet, inspiration, co-author and publisher of the *Check List of British Insects*. A man whose very name has jointly become a by-word of the monuments of Entomological literature, a work never referred to by its dry title alone, but known to a generation of entomologists simply as "Kloet & Hincks".

Needless to say, that very evening finds us (myself, and my wife as chaperone) driving to a pleasant Manchester suburb. We arrive to find the kitchen table and much of the floor loaded with an untidy assemblage

of containers, awaiting inspection. Storeboxes, mis-matched cabinet drawers, old-fashioned setting-board cases, cigar boxes, the odd cardboard carton and even something that appears to be two wooden seed trays loosely hinged together — all crammed with specimens.

Each one in turn is removed from the rickety pile; its lid gingerly opened; its contents carefully scrutinised. Here is a treasure trove of entomological history: a collection of caddis-flies ranged neatly in taxonomic series, each species with its cabinet label snipped directly from the pages of his own book.

A similarly labelled selection of Pyralidae; another of Tipulidae. Box after box of flies, and Hymenoptera of every kind. Some ordered again according to the sequence in "Kloet", this time transcribed in his own hand. Others in great unsorted seas of unrelated taxa. A meticulous approach to setting is apparent. Every fly, down to the very smallest, is fixed on its side onto transparent acetate, legs and wings posed in unvarying regulation pattern. Smaller flies are ranged four or five



abreast on a single sheet, with the sequence repeated in tiers of four, five, even six sheets on the same pin. Thirty insects per pin, hundreds per column, thousands per box. Every order is represented, all seemingly grist to the mill of Kloet's questing mind.

But there are disappointments too. Booklice, museum beetles, damp and decay have taken their toll. There are few species identified, and many without data. Fifty assorted beetles, bugs and flies — much as might be gleaned from an afternoon's sweep-netting — are gummed together on a large acetate sheet, unlabelled. I open one large box, and a dozen setting boards unexpectedly tumble out, moth wings still pinned in place, their bodies reduced to dust. It becomes clear that this is not his life's work, but rather the residue.

Then there are more gems, more surprises. Here a gynandromorph, there another huge spider, courtesy of his local greengrocer. Intriguing hand-written notes dotted here and there throughout the collection: "If correctly identified, hitherto known from only one British specimen". A cardboard shirt box crammed with Zambian butterflies. A generous scattering of material from fellow entomologists, including the Coleopterist Harry Britten. Reams of papered insects.

Some smaller boxes emerge from the bottom of the last heap. I unearth a minor treasure-trove of unused black entomological pins. There are pill boxes, forceps, glass tubes, a spirit lamp; the paraphernalia of a lifetime's collecting.

After a fascinating hour spent delving into these arcane delights, a deal is swiftly done and the whole extraordinary assemblage is stowed into the car with some difficulty. I drive off, now the proud possessor of the late G.S. Kloet collection.

It happens that we are staying with relatives over the festive season, but work beckons on the morrow and home is a 100 mile drive away. Nor will the family (two children, dog, accumulated Christmas presents) fit in the car at the same time as the entomological equivalent of the "Antiques Roadshow". So, when I suggest to my in-laws that the New Year celebrations should be rounded off by cramming their spare room full of dilapidated insect boxes, with the odd gargantuan bird-eater thrown in, they accept with only mild amazement. The saga of how these and other logistical tribulations were overcome would fill far too many pages of the *Bulletin*. Suffice it to say that once home, the sheer scale of the task of curating and cataloguing the collection becomes even more apparent, and the bulk of the material is eventually transferred to the Liverpool Museum, appropriately, in Kloet's native North-west.

Even today though, as I reach for a pair of forceps, their surface dulled by years of constant thumbing, I can recall that crisp Winter's morning in Stockport and that first rush of adrenalin as I find one of the best bargains *ever* at the January sales.

THE EFFECT OF SOUND ON CERTAIN INSECTS

by Jan Koryszko (6089)

A friend of mine who is a country sports person often goes out shooting and fishing. On one of his shooting trips during 1992, he tells me, he was standing quite close to a tree when he fired his gun. Suddenly a moth came spinning down out of the tree — then it hit the ground still spinning on the floor. Within minutes it was dead. Was it the shock wave that killed it; the high pitched sound of the gun?

I know certain moths have built-in sonar to detect bats at night, and *vice versa* (a game of cat and mouse) between them.

Another friend who worked for the Ministry of Defence testing ranges many years ago, Mr R.H. Heath, tells me that on ranges in regular use, no moths or butterflies were to be found hibernating in shelters or bunkers etc. while in others which had not been in use for some time they could be found.

I remember in my school days a class friend had a toy gun for his birthday which made a very loud cracking sound. He showed me how he killed spiders with it by putting the gun close to the spider in the centre of its web. The loud crack would kill it and it would often hang from its thread. But I remember on one occasion when the gun was held a little further away the spider was only stunned and recovered in a few moments; no doubt the spider's soft body is quite vulnerable. It would be interesting if other members have had similar experiences. No doubt high pitched sound does kill insects.

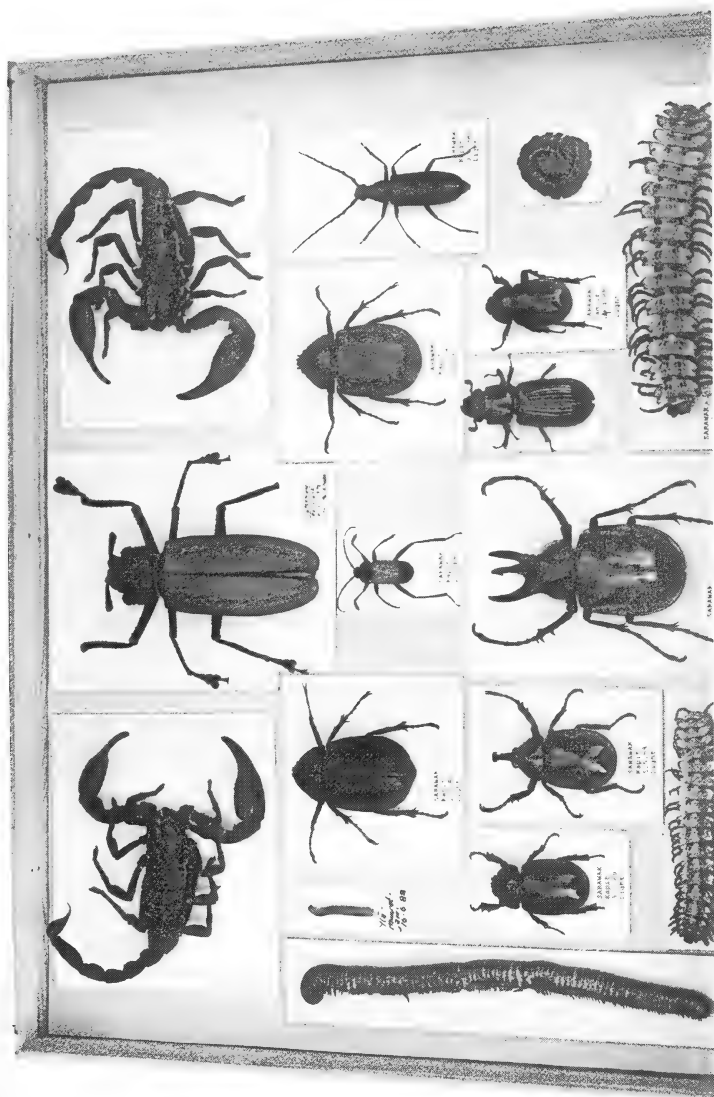
(Editor's note:— When the Rolling Stones held a memorial concert for Brian Jones in Hyde Park many years ago and thousands of Large white butterflies (*Pieris brassicae*) were released in his memory, those that flew within ten or twenty yards of the sound amplifiers were stopped in their flight and fell to the ground, just if they had been hit by gunfire.)

DOWN THE TUAK ROAD

by Leigh Plester (2968)

(The illustration shown on the opposite page should have appeared in the final instalment of this article in our October last issue. Unfortunately the photograph was mislaid in the post. Leigh has now kindly sent a replacement which we are now pleased to publish. — Editor.)

Some Bornean arthropods (not identified to species). Top row: Cerambycid flanked by scorpions. Extreme left: Millipede. Extreme bottom: one incomplete and another centipede. Second row, centre: a red, yellow and black cerambycid, flanked by two female rhinoceros beetles. Centre bottom: male rhinoceros beetle. The rest: various beetles and millipede types.



A SCARCE STAFFORDSHIRE BEETLE

by Jan Koryszko (6089)

3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire ST3 7AY.

On 10th May 1993, my friend Mr Derek Heath, in the company of Mr R.H. Heath, paid a visit to Cresswell Piece, Staffordshire, which consists of quite a large stretch of woodland, mainly oak and birch. It is a very interesting place for Lepidoptera, including such species as the Grey birch (*Aethalura punctulata*) the Early tooth-striped (*Trichopteryx carpinata*), the Yellow horned (*Achlya flavicornis galbanus*), the Argent and sable (*Rheumaptera hastata hastata*), the Orange underwing (*Archiearis parthenias*), and the Purple bar (*Cosmorhoe ocellata*).

On entering the wood they noticed a beetle fly onto the bole of a tree and it then started searching up the bark of the tree. So Derek Heath captured the beetle and took it home to photograph. It flew into his window out of the container, so he had to take the photograph of it there, because there was quite a bit of light coming through it. Two months later Derek mentioned to me his find, and showed me a slide of the beetle, so one afternoon I took my Coleoptera books to his house to identify the beetle. I could see it belonged to the carrion beetle family Silphidae and identified it as the Four-spot carrion beetle, *Dendroxena (Xylodrepa) quadrimaculata*, Fig. 1.

The next day Mr Heath took the slide to the Natural History keeper, Mr Geoff Halfpenny, at the City Museum and Art Gallery, Hanley,

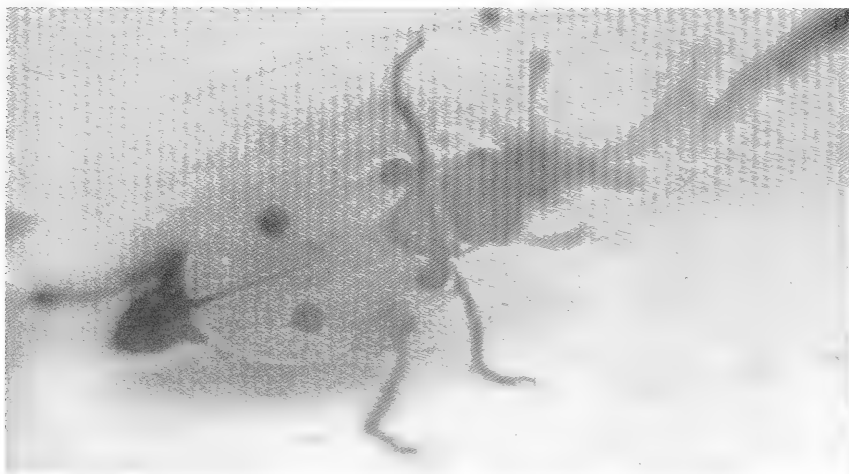


Fig. 1. The Four-spot carrion beetle, *Dendroxena quadrimaculata*, photographed by Derek Heath in the window of his house.

Stoke-on-Trent who confirmed it to be this species and further he said it is quite scarce in Staffordshire. It has unusual habits for a carrion beetle, since the adult beetles run about on bushes and trees hunting caterpillars of the Green oak leaf roller and Winter-moth etc. The beetle can become common in certain years. Mr D. Tozer, an expert on the Coleoptera, tells me it is locally wide-spread in many parts of the country and he has found the beetle in woods near Leicestershire where it is not uncommon.

The Rev. Canon Fowler mentions the following locations for this beetle in his book *Coleoptera of the British Isles* Darenth Wood, Coombe Wood, Loughton, New Forest, Plymouth, Langollen, Sutton Park, Dean Forest, Burton-on-Trent, Sherwood Forest, Nocton near Linwl, Northumberland district, very rare in Scotland, but found in Tayside, Moray and Sutherland districts and in Ireland rare near Dublin.

In Europe it is locally and occasionally abundant, but is absent at high altitudes.

I would like to thank Mr Geoff Halfpenny, keeper of Natural History for confirming the specimen and Mr D. Tozer for the information about this beetle.

BOOK REVIEW

Glorious butterflies and their flora, 8 Paintings by Valerie Baines, edited by David Dunbar. A4, pp39, ISBN 0 95124552 8 7. Butterfly Conservation 1993. Hardback. Price (post free) £12.50 or £15.00 signed copies.

Book after book on butterflies have been published recently, all treading the same path and churning the same old identification angle. Be assured, this book is not one of them. It is published for the out and out *enjoyment* of the butterfly illustrated on paper and not dead in a cabinet drawer. A book for pleasure, a blatant book for the coffee table. My immediate reaction was that it reminded me of the famous Victorian illustrator Henry Noel Humphreys and if the plates were in hand-retouched litho rather than modern colour printing the resemblance would be even closer, although Valerie Baines has a far more delicate touch than the often turgid and over-crowded effect of Humphreys. An excellent mix of butterflies and the plants upon which they nectar or the caterpillars feed. The butterflies are mainly shown as if they were in flight, or settled, and for most species both upper and undersides are shown and both sexes when they differ. Book for enjoyment it may be, but with a few exceptions it can as readily be used for identification as any of the "identification" books on the market, even by the non-entomologist. The plates are printed on a dead white paper and in my opinion they would have looked better with an off-white buff or a very pale cream background.

The distribution of butterflies on the plates are arranged according to habitat or status, not by classification. These include garden butterflies, endangered species, migrants, woodland species. Each plate has, on the facing page, a numbered layout with a list of both the butterflies and plants illustrated preceded on the recto page of text giving various account of the species depicted, all these being by different authors. The plate verso is blank and although the book contains 39 "pages" these include the un-numbered plates and the blank verso. Although not good typographical practice this does mean that the plates (which are also available separately) can be framed without the intrusion of lettering. Published to commemorate the 25th anniversary of Butterfly Conservation, a superior leather-bound limited edition of only 50 copies was published and was rapidly sold out. Like all such editions it will prove a good investment and this well-bound hardback ordinary edition is so reasonably priced it is well worth having.

Brian Gardiner.

NEW FOODPLANTS

by Bryan Winslade (9476)

Beech Grove Farm, Knowstone, S. Molton, Devon EX36 4RS.

Would-be rearers of the Golden emperor (*Loepa katinka*) will no doubt be interested to know of my discovery of a new and most satisfactory substitute foodplant for this species. The larval foodplants quoted for this species in the UK are Virginia creeper (*Parthenocissus* spp.) with grape (*Vitis*) and hawthorn (*Crataegus monogyna*) also given, but these are far less satisfactory pabulum.

At the end of July 1992 I had around 100 *L. katinka* larvae feeding on two modest sized potted Virginia creeper plants, which were then in a pretty sorry state having been virtually stripped of foliage. With the creeper running out, prospects for the larvae did not look good. I hoped they would accept a change of foodplant to hawthorn, but before trying this, I had an idea!

At least three hawkmoth species: Elephant hawk (*Deilephila elpenor*), Florida hog-sphinx (*Darapsa myron*) and Silver-striped hawk (*Hippotion celerio*) have one thing in common; all three species will eat Virginia creeper, willowherb and grapevine. I was intrigued by this; could these plants all contain the same chemical larval feeding stimulus? If so, perhaps *katinka* would also eat willowherb. It seemed such an obvious possibility, surely someone must have already thought of it, and tried feeding willowherb to *katinka* before!

When presented with rosebay willowherb (*Epilobium angustifolium*), the *katinka* larvae began feeding immediately and continued to eat it as though it was their normal foodplant. I decided to keep a few of the

larvae indoors in a plastic propagator. These quickly fed-up and spun-up, without problems. The remaining larvae were sleeved outdoors on growing willowherb. At first they did well but unfortunately it rained incessantly throughout August and only a handful survived to spin-up. It seems likely that other species of willowherb, as *E. hirsutum* and *E. montanum*, would also be accepted.

BOOK REVIEW

The butterflies of Kent, an atlas of their distribution by Eric Philp. A5. Pp60, 8 colour plates (16 Figs.), maps and illustrations, paperback. ISBN 0 950 1696 7 6. Kent Field Club (= Transactions Vol. 12) 1993. From K. Palmer, 62 Judd Road, Tonbridge, Kent TN9 2NJ. Price £6.50 inclusive.

This work does not attempt to back-track over old records, which of course have been covered in detail by Chalmers-Hunt (*Butterflies and moths of Kent*) but confines itself to recent history, the period 1981-1990 with records gathered in over that period by more than a hundred recorders.

I must confess to a feeling of nostalgia as I browsed through this book, for it was in Kent as a boy that I sallied forth in search of butterflies and my old haunts are still mentioned and it is good to see from these present-day records that, although in diminished numbers, species I took back in the '30s are still holding their own. In particular I now realise how lucky I was then to live in such a butterfly-rich area, I see that no less than 31 species are still to be found in my old stamping ground. Perhaps this is what continued recording and publishing of the results is all about.

The large number of recorders together with the obvious tenacity and energy of the author has ensured that the distribution of Kentish butterflies is that of the butterflies rather than the recorders, with only a few tetrads being un-recorded. Truly a remarkable effort.

The distribution maps are large, half a page, and therefore clear and are not unnecessarily given for rare migrants or doubtful species, which are, however, mentioned in the text. The maps give the picture while the clearly laid out text fills in with details of status, foodplants and flight periods. I am, however, puzzled by the seemingly random use of "Resident" and "Native" (in some cases "Native resident") as these terms are synonymous. The coloured plates which show a number of the commoner species are variable in quality but, while they perhaps add to the cost, which is not too unreasonable for a book of this quality, also add to the interest and enjoyment of any book, as do the rather charming black and white illustrations by Gill Brook. Clearly a must for all butterfly lovers in or visiting Kent.

Brian Gardiner.

VERY LATE LARVAE OF PALE TUSSOCK

by Geoff Ayres (8950)

On Friday 5th November I was walking with my wife, a friend and her dog, in an immature beech plantation on the South Downs, just north of East Dean in West Sussex (that covers all points of the compass). We noticed very large numbers of larvae of the Pale tussock moth (*Calliteara pudibunda*) crawling over the fallen beech leaves. They were distributed at least three to the square metre, over a large area of the wood. All three colour forms were present, pale green, yellow and orange-brown. It was impossible to avoid treading on some of them. The day was bright and sunny with many of the beech trees already bare of leaves. This is surely very late for these larvae to be pupating? The only obvious foodplant was the beech, and the larvae were seen before we reached the pub (recommended).

SMALL BLUE, *CUPIDO MINIMUS*, RE-LOCATED IN DERBYSHIRE

by Roy A. Frost (10011)

On 13th June 1993 while counting butterflies in a small dale in the Carboniferous limestone area of the Derbyshire Peak District, Mary Buck and I spotted a male Small blue perched on the leaf of a melancholy thistle *Cirsium heterophyllum*. I informed other local observers, all of whom apparently saw the species in the same locality later that month, the maximum being five on the 24th. These are the first Derbyshire records since 1986, when it was seen in two nearby dales after an absence of 71 years. It seems likely that there is a regular but tiny population in the Peak District. The larval foodplant, Kidney-vetch, *Anthyllis vulneraria*, is abundant on many of the limestone dales.

MONARCH SIGHTING IN THE MIDLANDS

by Leigh Plester (2968)

A friend of mine since school days, Cedric Bloomer, has just written to say that on 3rd June 1992 a Monarch butterfly (*Danaus plexippus*) flew past his house at Hagley, Stourbridge in the West Midlands, adding "It flew fairly quickly and very sort of 'purposefully'. There was no mistake. I ran along with it for 20 yards or so because I just couldn't believe it!" I can confirm that, as a one-time collector and breeder of butterflies, Mr Bloomer "knows his onions" and have no hesitation in communicating this sighting. It would be interesting to know whether anyone in the Birmingham area has been breeding the species and may have released one or whether the specimen was a true vagrant from North America.

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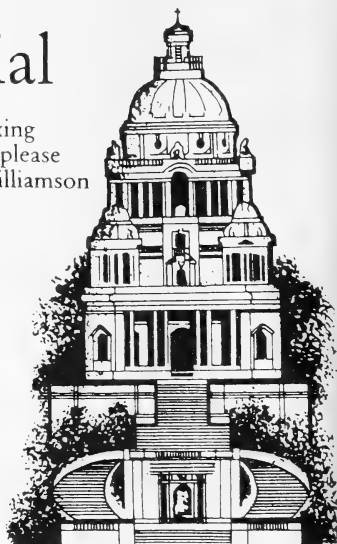
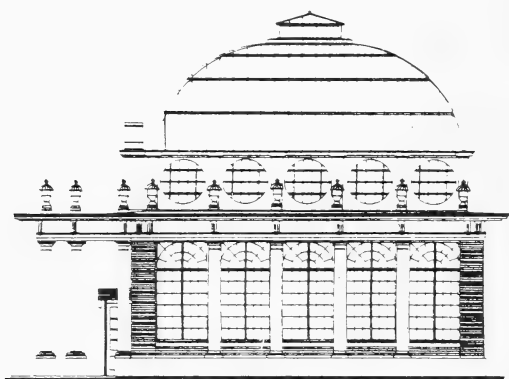
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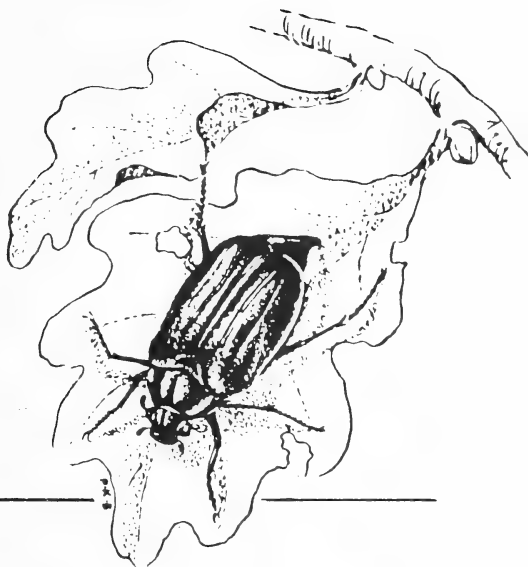
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AES BULLETIN

No. 393



EDITORIAL

In this issue we publish two separate accounts of both the Paris and the Leicester entomological fairs. It really is interesting to see how such events can give differing impressions. There have been numerous versions rumoured about as to the events that allegedly took place in Leicester (which I was unfortunately unable to attend) and I am grateful to Dr David Sheppard of English Nature for not only putting the record straight but also giving us the clearest exposition we have yet had of both the working of the Wildlife Acts and of the friendly attitude of English Nature, who have often been unjustly blamed for an "anti-collecting" stance, which is clearly not true. Responsible entomologists will always find them helpful. Rogue dealers need to be put out of business, for they are a source of contamination to the rest of us. We should all help in this and the surest way of doing this is to refuse to trade with them.

This will be the last issue under my editorship. It is just 20 years since I took over with the May issue in 1974. During those 20 years I have enjoyed the friendship of many of my authors, often having a lively correspondence with them. So far as I know only one member ever resigned because he did not like the way I had edited his article. To the many who have sent me bouquets I express my appreciation and thanks; at times it has been these words of encouragement that determined me to continue; the occasional brickbat I accept in the spirit it was given.

During my tenure as editor membership of the Society has doubled, the *Bulletin* size has increased by a hundred pages a volume and it is

issued bi-monthly instead of quarterly. Latterly, too, we have been able to regularly include colour plates. This has of course increased my workload but at the same time made for a more informative and prestigious *Bulletin*. While I like to think that I have played some part in this, these improvements have come about partly by the increased membership bringing in more income, which allowed more pages to be printed and the ability of our Treasurer to balance the books. The quality of the articles sent in for publication during my tenure of office has been consistently high and there have been very few I have had to turn away. The quality and interest of the articles in our *Bulletin* could well be one of the reasons for the increase in membership, although I understand from some that the enjoyment of our Annual Exhibition is another reason for joining! On principal I have never turned away any item from a junior member and only wished at times that there had been more input from them. There is nothing like encouragement once an initial interest in entomology has been aroused and I am eternally grateful to the late N.D. Riley who accepted my first schoolboy notes for *The Entomologist*, never dreaming all those years ago that I would one day become its editor! Looking back over the years I am greatly encouraged when I see that some of today's well-known entomologists — either through their writings or professorships — were Junior members of the AES in years past.

The colour plates are entirely due to the exceeding generosity of several members who have donated sums to the Society and in particular the late Cyril Hammond and Peter Crow who saw fit to leave the Society large portions of their estates in their wills.

Initially all editing was done on a small portable typewriter, or by hand. It was not long, however, that I moved over to a mainframe IBM computer and finally to a home PC. Our typesetting and printing methods changed ten years ago from a linotype using hot metal to computer lithography: the monochrome illustrations from half-tone zinc blocks to xerography, although frankly I prefer the zincos which in my opinion gave a greater tonal clarity than xerography does. As usual with modern production methods, one cannot mix the two and the cost of the older methods becomes prohibitive.

One of the reasons why we have been able to offer such a substantial yearly volume at such a low subscription rate compared to contemporaries is that some 70% of printing costs are taken up in producing the first copy, thereafter little more than the cost of the paper and binding is involved and our distribution of some 2000 copies per issue is double even triple, that of some other journals. Latterly, unfortunately, the very high postal charges now amount to about 50% of the printing costs, whereas 20 years ago they were less than a third. This is something over which we have no control.

I express my thanks to the several members who have corrected the *Bulletin* proofs over the years or helped in compiling the index. I also thank our printer, Norman Cravitz, now also retired, for his friendship, helpfulness and understanding of our needs over the years. I am pleased to say that his son Matthew is carrying on the business and send him and the new editor my best wishes for the future.

Your new editor, to whom all future contributions should be sent, is Wayne Jarvis, Roxwood Lodge, 44 Broadgate Road, Sutton St. Edmund, Spalding, Lincolnshire PE12 0LY.

OBITUARY — DON TOZER

1907 - 1993

With the death of Don Tozer (number 36 on our Membership List) on the 5th October, the AES has lost one of its last surviving founder members spanning the period from the Society's formation in 1935 until the time of his death. Don, who died at the age of 86 years, was an entomologist of the old school with an extensive and immaculate collection of specimens. Despite the disability of being lame from birth he was an exceptional coleopterist and lepidopterist with an uncanny ability when it came to locating scarce and local insects, especially in their larval stages. Don never really accepted the destruction of many of his favourite haunts and could not forgive those responsible for such widespread impoverishment of our countryside.

Despite being lame, and during his latter years crippled with arthritis, Don remained cheerful and always grateful when visited at his home at 96 Copdale Road, Leicester, enjoying reminiscing about a wealth of exciting experiences of time spent "bug hunting" in his local countryside or of frequent visits to insect localities further afield and of occasional visits abroad.

For over half a century Don has served on the AES Advisory Panel, giving general advice on the identification of beetles.

Peter Gamble

THE KINGCOMBE CENTRE

We have received details of the various courses run by this organisation which we first reported on in *Bulletin* 51: 143. Courses vary from an evening's moth-trapping (28th May) to butterflies of spring and early summer (23-27th May). Courses on painting, music, archaeology, botany or just rambling (regularly on first Sunday of the month) are also run and children and youngsters seem specially catered for. Details by phone 0300 320684.

BOOK REVIEW

Hoverflies by Francis S. Gilbert. A5, pp 67, 4 coloured plates, 68 text figures. Naturalists' Handbooks No 5 (2nd ed.). Richmond Publishing Co. Ltd. 1993. Price £13.00 hdbk, £7.95 pbk.

Hoverflies became a very popular group of insects to study after the publication of *British Hoverflies* by Stubbs and Falk (1983). They are an easily recognisable family of flies and with the aid of the recent literature are relatively easy to identify.

This book will give both the novice and the expert a comprehensive background to the group. The chapter on biology, includes information on all the stages, behaviour and ecology. The identification guide goes into detail of 42 of our most widespread species of hoverfly, with some very useful text figures. The colour plates, which have been taken from Stubbs and Falk, have unfortunately lost a little colour, but this fact does not detract from their usefulness.

There is an excellent list of references and further reading, which contains all the essential papers to look up for the student wishing to take the group further.

With plenty of ideas for future study this book certainly makes the hoverflies more than just specimens on pins.

Darren Mann

NYMPHALIDS ATTRACTED BY SMELL

by Jan Koryszko

3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire ST3 7AY.

I was interested to read Stuart Pittman, "Peacock turns carnivore" (*Bulletin* 52: 140). Some years ago, with a friend, I visited a pond at Stallington, Staffordshire. A rotten fish was left there and we saw two Peacock butterflies (*Inachis io*) feeding on the rotting flesh, and a number of flies also.

I also remember two common wasps on the dead fish, and when the two wasps got close to the Peacocks they were flicked away by their wings. They were quite aggressive towards them. This behaviour I have seen happen on flowers also, Red admirals (*Vanessa atalanta*) and Comma butterflies (*Polygonia c-album*) have also done this. The strong smell of the rotting flesh must have attracted the Peacocks. It was late summer and a hot day.

I remember reading in some old butterfly book that a dead rabbit which was left for a few days and was stinking, was taken to a locality in order to attract the Purple emperor (*Apatura iris*). After a short time they would come down from the tree tops and feed on the rotting carcass. Certain nymphalids are attracted to foul smells, not only rotting flesh but urine etc. also.

ENGLISH NATURE TAKES A CLOSER LOOK

by Paul W. Batty (8926) Editor, *Entomological Livestock Group*

4 Byron Road, Dinnington, Sheffield S31 7LP.

If you are planning to “hold stall” at one of the entomological shows this year, then make sure you put on a clean shirt with a spotless collar, for if representatives from English Nature are around, it is possible that they may want to have a feel at it!

At the Christmas Entomological Fair in Leicester, 5th December last, two extra visitors made their presence felt. A police officer in plain clothes, accompanied by a scientist from English Nature, were taking a close look at many of the dead specimens on sale, especially the British and European species. One would have thought that a gentleman with large black shoes would have stood out like a sore thumb, but apparently not! By the end of the day, rumours of “entomologists being dragged away screaming and kicking” and “loads of ‘stuff’ being confiscated”, were rife (and the “one that got away” was 20 feet long), but after carefully picking through the comments and comparing these with my own observations, one or two facts became apparent.

One infamous visitor to the show (I stress *not* a bona-fide trader), who regularly “deals” from his car and from store-boxes in the bar area, was escorted back to his vehicle by the two gentlemen and an unknown number of dead specimens were confiscated.

A Trader had several set specimens of the Chequered skipper (*Carterocephalus palaemon*) taken away and there was an unconfirmed report of set specimens of the Wood white (*Leptidea sinapis*) being confiscated. At the time of writing, it is not known if any of the specimens have been returned or if any prosecutions are to follow.

I am happy to say that the incidents were isolated and most traders were unaware of the happenings but it is most interesting to note that livestock was not targeted, even though I personally saw livestock of the Purple emperor (*Apatura iris*), Chalkhill blue (*Lysandra coridon*), High brown fritillary (*Argynnis adippe*), Large tortoiseshell (*Nymphalis polychloros*), Swallowtail (*Papilio machaon*) and many other species on Schedule 5 of the Wildlife & Countryside Act 1981 openly offered for sale.

There are many reasons why livestock may have been left alone, not least of which, is the fact that “No licence is required to sell captive-bred stock”. I personally know many of the livestock traders who were at Leicester and can safely say that the vast majority of items offered were undoubtedly captive-bred. In addition to this, positive identification of ova, larvae or pupae of some of the species on Schedule 5 can be troublesome, especially when presented in a plastic box. On the other

hand, a dead British butterfly specimen can generally be identified by anyone with a copy of *Observer's Butterflies* in their hand.

Mr Jack Harris, the organiser of the Leicester Fairs, referred to the incidents in a subsequent booking form as "items being impounded" and goes on to say "we must now insist that all exhibitors carry written evidence from the DoE (Department of the Environment) that the items (this refers to dead set material) that they are selling are being sold legally." Again, no reference to livestock. It looks like "the great deadstock witch-hunt" has begun.

Mr Harris adds "In short, we want to see everybody with a letter of approval from the DoE, or import licences in the case of foreign material." *Everybody?!?* Obviously Mr Harris has not tried getting a "letter of approval" from the DoE.

I guess that is the end of most of the deadstock at future shows. Not a bad thing I suppose. It has saddened me for some years now, that a dead set specimen of many species commanded a higher sum of money than a live pupa or chrysalis. (Not to me though!)

REFERENCES

- Stubbs, A.E. (1990). *Protected British Butterflies: Interpretation of Section 9 & Schedule 5 of the Wildlife & Countryside Act 1981*. NCC (now English Nature).
 Harris, J. (1993). *pers. com.*

ENGLISH NATURE RESPONDS

by Dr David Sheppard

English Nature, Northminster House, Peterborough PE1 1UA.

Mr Batty's article above raises a number of points concerning English Nature and the administration of the Wildlife and Countryside Act 1981. Given this, and some of the excited but highly inaccurate accounts that have been circulating concerning the Leicester Fair, I think it would be helpful to give my response as the person who was actually involved.

Firstly, English Nature staff will not be "feeling the collar" of traders at any Entomological fair. Breaches of section 9(5) of the Act covering the trade in protected species are criminal offences, and are therefore a matter for the Police and ultimately the Courts. In the alleged Leicester case, it was the Wildlife Liaison Officer of the local Constabulary who initiated the investigation, and I was quite properly called in, as an Entomologist in English Nature, to verify the identification of certain species.

Secondly, licensing arrangements under the act are separately administered by the Department of the Environment's Wildlife Division in Bristol. Fair organisers may wish to see proof of *bona fide* trading but this is entirely at their own discretion and is not a requirement of DoE, English Nature or the Law.

It is clear to anyone attending these trade fairs that most of the British butterflies offered for sale, both deadstock and livestock, are captive-bred, or at least captive-reared. Legal trade in captive-bred stock is not usually an issue of concern in invertebrate conservation. Trade in captive-reared material is of concern but, at the moment, still appears to be legal except in the case of fully protected species. It is even possible to trade in these so long as a licence to do so has been obtained. Such licences have been and will continue to be issued, under certain conditions, so there can be no excuse for trading without one.

Thirdly, the Leicester Fair did not mark the commencement of a "witch-hunt" on traders in deadstock. English Nature has never numbered amongst those organisations that wish to see a clampdown on collectors or the legitimate trade in insects. Nevertheless, English Nature staff do visit fairs regularly, and have done so for many years. They do this to assess the general nature and level of trade in both livestock and deadstock, to buy books and equipment, and to meet with a wide spectrum of entomologists both amateur and professional — in short, for much the same reasons that most AES members would attend! Any apparent infringements of the legislation are of course taken up with the trader concerned or the appropriate authorities, but this should be the reaction of any responsible entomologist and not the prerogative of English Nature staff. Rogue dealers do a great disservice to conservation, to entomology, to the trade fair organisers and to honest traders who deal legally and in good faith. I consider it highly desirable to rid entomology of those who trade illegally and fully support the police in their effort to enforce the law.

Finally, in the alleged Leicester offence, all the evidence gathered (including specimens) would be retained by the Police as is normal in any investigation. A report has also been submitted to the Crown Prosecution Service and any further comment would therefore be inappropriate.

THE SCORCHED WING IN STAFFORDSHIRE

by Jan Koryszko (6089)

On 1st July 1993 I visited Moddershall and was beating on the outskirts of woodland when out came a Scorched wing, *Plagodis dolabraria*. This is a scarce moth in Staffordshire and my previous encounters with it have been at Fenns Moss which is in Shropshire. This was back in 1985 and 1986, also in July. Previous Staffordshire records are given by R.G. Warren in the Victoria County History. He reports it as rare at Burnt Wood, Cannock Chase, Needwood Forest, Bagots Wood, Coombes Valley and Alvecote. So Moddershall is a first for Staffordshire and I will be interested to see if it can be turned up elsewhere in the county.

LOST EGGAR ABDOMINAL TIP ATTRACTS THE MALES

by M.J. Dawson (9130)

The following event, which I recorded many years ago, may be of interest to compare with Jan Koryszko's observations on the Yellowtail moth (*Bulletin* 52: 155).

In July 1948 on farmland near Stowmarket I tried to intercept a female Oak eggar moth. The insect hit the frame of the net and fell to the ground. As I inspected it, the moth flew off. Shortly after, a male Oak eggar flew down to the spot where the female had fallen. Five minutes later, another male performed the same action. I examined the ground carefully and found the tip of the abdomen of the female, which had been knocked off by the net rim. It had a green sticky liquid inside. Another male eggar arrived, fluttering about my fingers.

Obviously, the scent of the fluid attracted the male moths, the female now being a long way off. How long this effect would have remained, is not now possible to guess. Had Koryszko's article been published in 1948, I would have experimented longer!

PREDATORS AND PREY

by Jan Koryszko (6089)

3 Dudley Place, Meir, Stoke-on-Trent, Staffordshire, ST3 7AY.

I was interested to read the article by K.J. O'Callaghan (*Bulletin* 52: 126) about house martins, spiders etc. using street lamps and other forms of lighting to take their prey. Yes, most of us entomologists have seen this happen during our observations.

But not just light is used by predators. Here are some of my observations. Spiders often spin webs on my buddleia bushes and *Sedum* plants when in flower. Often webs are spun quite close to one another, these are quite effective both by night and day in entrapping (and the spiders killing) a number of butterfly and moth species as well as other insects. Dragonflies also hawk the flowers from time to time and at night when sugaring I have noticed toads waiting for a drunken moth to come its way at the stump of a tree. Cats also seem to enjoy killing moths at the sugar patch. Spiders often lurk on my white painted garage at night which often attracts moths and smaller insects.

My friend Mr Derek Heath, was sugaring a stump in his garden one evening, when a drunken moth fell to the ground and at once a beetle came from behind the stump and nipped a wing off the moth so it could not fly away, carried it a short distance and then ate it. The beetle returned to the stump and did the same thing to its next victim. Yes, predators do seem to know what attracts their prey. No doubt other entomologists can add to my findings on this subject.

HYBRID SILKMOTHS

by Bryan Winslade (9476)

Beech Grove Farm, Knowstone, S. Molton, Devon EX36 4RS.

Towards the end of July 1992 I was lucky enough to obtain a pairing between a male Tusseh silkmoth (*Antheraea mylitta*) and a female Chinese oak silkmoth (*Antheraea pernyi*). The Tusseh, which had emerged the previous night, was confined with three freshly emerged virgin females, two of which were *A. pernyi* and the remaining one a Japanese oak silkmoth (*Antheraea yamamai*). A relatively small cardboard box was used as a pairing cage, netting was stretched across the top, and the box placed on its side. The cage was then kept in a room with a night temperature of around 23°C. As the normal habitat of *mylitta* is hot and steamy, I gave the cage a good soaking with a mist spray at dusk. The moths paired during the first night and parted the following evening. Over the next few nights over 230 eggs were laid, 201 of which were deposited on the first night of laying.

The first larvae, three in all, hatched on the morning of the 9th August, and were noticed around 8.00am. I immediately transferred them to a clear plastic box with a sprig of tender young oak leaves. In appearance the young larvae were similar to *pernyi*, the overall ground colour being a dark greyish-green approaching black. The head was fairly dark, but not uniform “matt” brown, unlike both parent species which produce glossy-headed larvae (*mylitta* glossy black and *pernyi* glossy orange).

Disappointingly, it was a further 24 hours before any more larvae hatched and then only two! — the larvae were obviously having great difficulty escaping from their egg-shells. I was not at all surprised at this, *mylitta* being a much larger moth than *pernyi* (a similar problem occurs with Poplar hawk (*Laothoe populi*) x Eyed hawk (*Smerinthus ocellata* hybrids). As far as I am aware the ova never hatched, except, I am told, when given assistance with a razor blade at the crucial moment. The last *mylitta* x *pernyi* larva hatched on the 17th August, making a total of nine. Unfortunately the larvae were already beginning to die. The first larvae to hatch began to prepare for their moults on the 15th August but by the following day the first death had occurred. A number of unhatched ova were examined and these invariably contained dead larvae.

Larval characteristics

All nine *mylitta* x *pernyi* larvae exhibited the following traits:- minimal growth between instars, a poor grip on foodplant and they experienced difficulty with moults. Five of the nine larvae to emerge from the ova perished whilst attempting the first moult; silken-pads spun for this purpose appeared to have been inadequate. By the fourth instar only two

larvae remained alive, both well below the expected size, as had been the case in all previous instars. Pearly silver metallic mounds beneath the dorsal and upper lateral tubercles of both larvae were retained from the previous instar. One larva had a much larger metallic mound than the other. It died shortly after reaching the fourth instar.

Despite being a virtual cripple the remaining larva continued to thrive, remarkably reaching the "7th instar" on the 43rd day. Having reached this stage the larva showed no further inclination to feed, but, by the 45th day, it was weakening noticeably. Clearly it was not going to survive for very much longer. I decided to preserve the larva and placed it in the deep freezer on the 45th day, 23rd September 1992. The life cycle of the larvae is given in Table 1.

Table 1. Duration and total longevity of the hybrid larvae.

<i>Mylitta x Pernyi</i> skin changes	Instar age days	Total age days	Instar	Length
First skin change	8	8	2nd	
Second	6	14	3rd	
Third	5	19	4th	
Fourth	7	26	5th	2cm
Fifth	7	33	6th	(3.5cm 30 days)
Sixth	10	43	7th	5cm

Description of *mylitta x pernyi* larvae

2nd Instar. Head becoming lighter, medium chocolate brown. True legs, tips of prolegs, anal triangle, setae 2, dorsal tubercle 9 and caudal tubercle 11 now medium chocolate brown. Body apple green. Setae 1 and 3 crowned with bright orange, as were dorsal tubercles 4 to 8 and 10. Upper lateral tubercles crowned bright orange. Broken orange line along lateral tubercles.

3rd Instar. Head continues to lighten, hazelnut, freckles not yet apparent. True legs, tips of prolegs and anal triangle hazelnut. White stripe on the lower and upper edge of anal triangle. Body apple green, spiracles black, lateral line yellow. Prominent silvery metallic mounds beneath setae and dorsal tubercles 1 to 9. Setae, dorsal tubercles and caudal tubercle crowned with bright orange. Upper lateral tubercles bright orange and with very large pearly silver metallic mounds beneath on segments 3 to 10. Lateral tubercles crowned bright orange.

6th Instar. "The most attractive instar". The head is now very like that of a larger *pernyi* larva, hazelnut and well freckled. True legs, tips of prolegs similar in colour to head. Anal triangle medium chocolate. White

stripe along lower and upper edge of anal triangle. Body apple green with yellow lateral line and orange spiracles. Dorsal tubercles crowned violet with fairly prominent metallic gold mounds. Caudal tubercle pale orange gold with violet. Setae pale orange gold with violet. Upper lateral tubercles crowned with violet, above pale orange gold mounds, lateral tubercles indigo, sub-lateral tubercles above 2nd and 3rd true legs, blue.

7th Instar. Head now fawn, freckles less conspicuous than 6th instar. The larva now closely resembles a 5th instar *pernyi*. Body apple green with yellow lateral line and dark-ringed spiracles. Chocolate anal triangle with white stripe along lower and upper edge. All tubercles and setae now very much reduced from previous instar. Mounds below dorsal and lateral tubercles reduced and now a dull metallic gold, as are setae and caudal tubercle. Upper lateral tubercles purple, lateral tubercles dark indigo, sub-lateral tubercles above 2nd and 3rd true legs, dark blue.

NORTHERN EGGAR LIFE-CYCLE AS SHORT AS FIVE MONTH'S?

by Bryan Winslade (19476)

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With reference to Paul Waring's remark concerning the Oak and Northern eggar moths in his Presidential article (*Bulletin* 51: 259), *Lasiocampa* enthusiasts may find my recent experience with these moths of interest.

In June 1991, Mr J.A. Cooper (Biology Dept. Kilhuimen Academy), sent me a number of ova of the Northern eggar (*Lasiocampa quercus callunae*). The ova originated from a wild pairing 23.06.91, which Mr Cooper observed on a hillside at Lochtarff, which I assume to be near the Kilhuimen Academy, Fort Augustus, Scotland.

The thought of having to look after the resulting offspring for some two years, before they would ultimately emerge as adults did not appeal to me. With this in mind I decided to attempt forcing! On hatching from the ova the young larvae were reared indoors. Although there was no direct immediate heating, the room in which the larvae were originally kept had a bright sunny south-facing aspect and was quite warm for most of the time. At first the newly-hatched larvae were kept in a plastic box but as soon as they had grown a little they were transferred to a cardboard box. A few fresh sprigs of willow (*Salix cinerea/caprea*) were added to the box daily. To help combat wilting, these were lightly sprayed at the time of introduction. Although the willow was wilted for much of the time, the *callunae* larvae showed no ill effects, and fed-up rather more quickly than I had anticipated.

Some weeks after receiving them I unexpectedly received some ova, this time *L. quercus quercus*, through the post. The resultant larvae were subsequently reared alongside the *callunae*.

By late autumn, the *callunae* had spun-up, and the *quercus* also were beginning to spin. The *quercus* had now almost caught up in growth, despite the long headstart of the *callunae*. Over the final month or so of growth, the larvae were brought in to a warm, continuously heated room. The last of the *quercus* spun-up just as the sallow began to lose its leaves in earnest.

After spinning-up, the *callunae* and *quercus* cocoons were placed in a cool place for a while, and then, later, placed in a refrigerator, where they were overwintered. If the cocoons had been kept warm, the *callunae* may well have emerged in November, thus shrinking the period of the normal life-cycle to five months, less than a quarter of the wild two-year cycle!

In April the cocoons were laid out to hatch. The imagines emerged from the end of May through June to July, with an apparent emergence-gap between the larger darker *callunae*, which hatched first, and the later, paler and smaller *quercus*.

OF BADGERS, BLOWFLIES AND STINKHORNS

by Martin Hancox

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Whilst the interrelationships of predators and their prey are often complex, there are some which are decidedly bizarre. It has recently been suggested that there is a link between badger (*Meles meles*) setts and the embarrassingly named stinkhorn fungus (*Phallus impudicus*) (P. Sleeman, *pers. comm.*). Such a link has not been noted in earlier studies near Oxford, for example, but might well have been missed. It is possible that badgers eat stinkhorns and hence they reappear near setts as do blackberries and elders. A more probable explanation, however, is that blowflies are attracted to carcasses underground where their maggots are major decomposers of carrion. The adult flies on re-emergence may well feed on and disperse stinkhorn spores in the vicinity of setts if they spend any amount of time on the sett latrines. Clearly there is scope here for more observations to be made and I shall be glad to receive further information.

For further background detail on badgers, see my articles in *School Science Review* 70: 66-69 and *Bulletin of the Amateur Entomologist's Society* 50: 255.

GIANT STICK-INSECTS IN AUSTRALIA: NOTES ON *ACROPHYLLA TITAN* (MACLEAY)

by Paul D. Brock (4792)

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This article deals with the "genuine" Titan stick-insect from Australia, including remarks in older literature, description, habitat, behaviour and culture information. This insect has beautifully-coloured wings and is one of the longest stick-insects in the world. Details of relevant papers are also given.

Macleay described *Phasma titan* in 1826, commenting "It seems to be not uncommon in New South Wales". The species was subsequently placed in the genus *Acrophylla* by Gray (1835).

George Robert Gray, ex-staff member of the British Museum, is well known to stick-insect enthusiasts for his small book, published in 1835. He completed a lesser-known and attractively-illustrated work in 1833 when he was only twenty-five, which includes fine original drawings of Australian stick-insects by Charles M. Curtis. His Plate 4 shows an almost life-size female specimen described as the Titan Tailed Spectre *Diura titan*. Gray remarks that "Kirby noted it as the longest of all the Orthopterous insects which are at present known". An uncoloured plate was also published in Westwood's book (1859) and this is reproduced here as Fig. 1. The beautiful hand-coloured version of it is reproduced on page 85 of Dance & Hancock (1991), currently available from various discount booksellers. My own photographs of a male and female are illustrated on Colour Plate QQ. Gray's common names of stick-insects, often cumbersome, were rarely accepted for popular use.

Australian stick-insects have generally been poorly studied. The exception to this relates to a few pest species where population explosions occur from time to time, and papers on culture stocks kept in Europe. One reason for this apparent lack of attention may be that adults of most species are often regarded as being rare. There are also difficulties in identifying material due to the poor state of taxonomy of the order. As mentioned in my AES handbook (1992) the species *Acrophylla wuelfingi* (Redtenbacher) known as the "Queensland Titan" was originally mistakenly identified as *A. titan* for many years. Vickery's Catalogue of Australian Phasmatodea (1983) lists 97 species and three species have since been added by John *et al.* (1987). Whilst examining various museum collections of unclassified material in Europe and Australia it is apparent there are many more species to be described, including a few large species. In addition the synonymy of some species warrants further research.

A. titan has been little studied. Bedford (1978) and Carlberg (1987) link this species, with doubt, to the insects described in Coleman (1942,

1943). However, the illustrations of eggs and adults of the "Great Brown Stick Insect" clearly belong to a *Ctenomorpha* species. Heather (1965) shows figures of the egg and female genitalia of *A. titan* from Brisbane, S.E. Queensland. The egg is also figured in Key (1970, 1991). McKeown (1935, 1940 and 1944) includes a black and white plate of an undoubted female *A. titan*, which he called "The Great Brown Phasma".

Gray (1833) gives an accurate description of this species and it would be difficult to improve on it: "The general colour of the wings is blackish-brown, but irregularly spotted and banded with white; the costal area is of a greenish-black irregularly spotted with testaceous and has the base red. The tegmina are similar to the last in colour and markings, but with a white spot near the centre of each; the head and prothorax are of a greyish colour; the former has three distinct stemmata in front; the mesothorax is reddish, but with scattered sharp tubercles; the abdomen is orange, with the tip and leaflets of a grey colour, the latter rather short in proportion to those which some species possess, and are quite differently formed from the others, being trigonal and dentated; the legs are also short and very much dentated, but the fore ones are trilateral." Gray was describing the female but the thinner male is broadly similar, with full size wings. The thorax is brownish and the tubercles more numerous and spine-like. An average female is nine inches long (some 22cm), 14 inches (40cm) if the long fore-legs are included. Males average six inches (15cm) in length.

Nymphs are often green, but sometimes brown; there may be a bold white longitudinal stripe along the whole length of the body.

Habitat

Whilst I already have live adults of *A. titan* for research purposes, it was a great pleasure to see these insects in the wild on my second trip to Australia in March 1993. On 30th March I was shown a good locality on trees in a small park at Deception Bay, north of Brisbane, S.E. Queensland. December and January are probably the best time of year for seeing adults of both this and other species, when it is possible to find large numbers. A quick search revealed at least twelve specimens, mainly females, hanging 10-30 feet high up on branches. The biggest surprise of all was to find that the main foodplant is a type of localised pine called Bribie Island Pine. I spent some time photographing these insects and a zoom lens definitely helped in these circumstances. One female was feeding on pine, otherwise they were motionless. In some instances the camouflage was remarkable, the mottled wings especially blending in with the branches. There was a fine silhouette of a female at the edge of one tree, 30 feet high up. *Callistemon rigidus* trees planted across the road from the park, in front of houses, revealed a pairing couple,

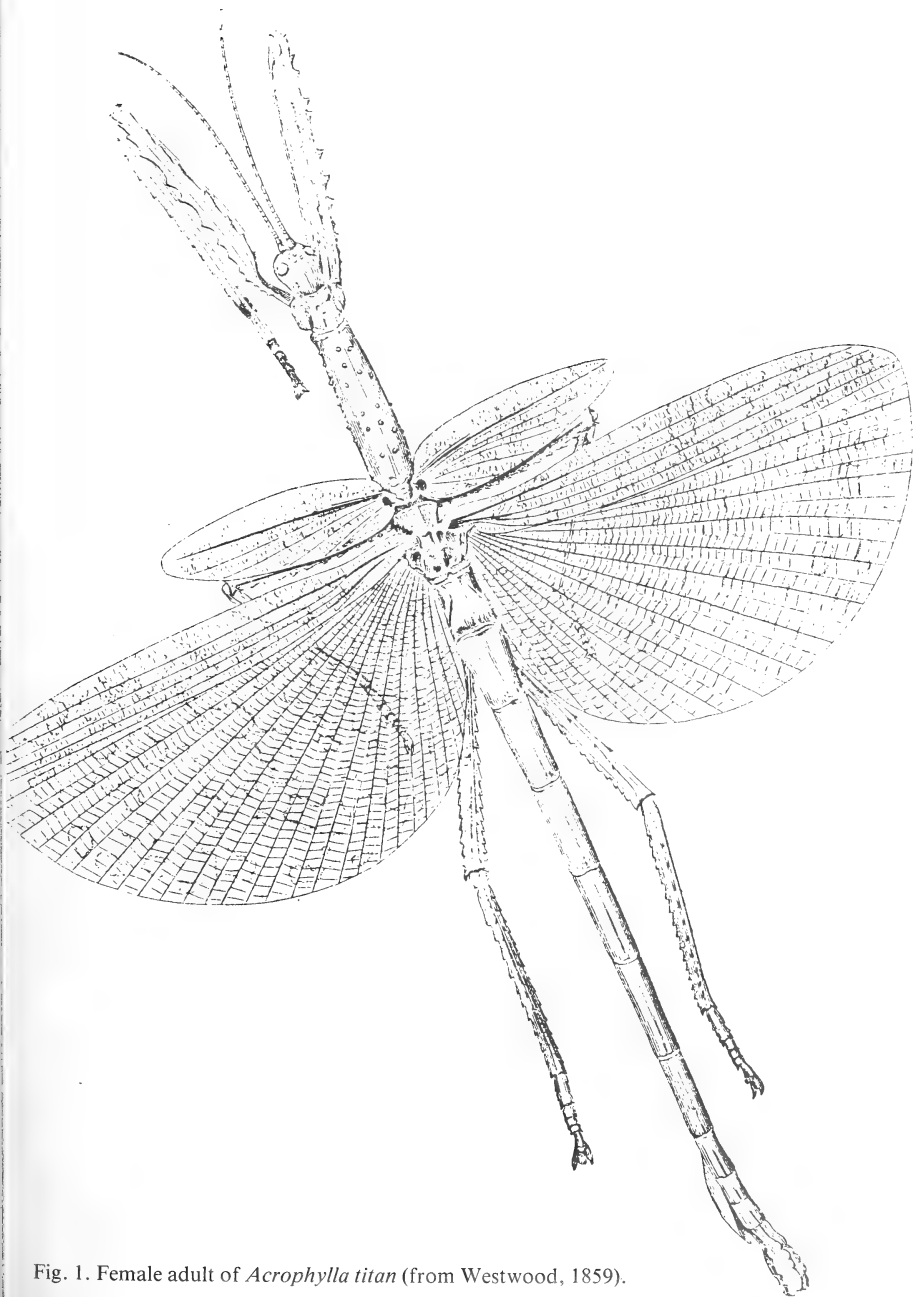


Fig. 1. Female adult of *Acrophylla titan* (from Westwood, 1859).

another male and more females. On the soil below it was not difficult to find eggs, flicked to the ground by females above. The insects found were close to the end of their life-span and a few had up to two limbs missing.

On 1st April a drive further north to the touristy ginger factory at Yandina, Sunshine Coast, produced another female on a broad-leaved tree in the car park. I had spotted some eaten leaves and saw the insect near the top of the tree, about 12 feet up.

The distribution of *A. titan* appears to be restricted to Eastern Australia; Victoria, New South Wales and Queensland.

When disturbed females may drop to the ground and walk rapidly to find suitable cover. If handled they appear to walk very awkwardly in an attempt to escape; *i.e.* they do not cling on and fall to the ground. The wings may be flashed open to reveal bright colours which could startle a predator. The wings are often held open for several seconds. Males are very good fliers, unlike the females, which are heavily laden with eggs. When disturbed, one male made a getaway by flying upwards to another tree some distance away where the mottled wing pattern blended in with the background.

Females flick their eggs to the ground which may mean they travel several feet from the tree below and ensure a better survival rate rather than if the eggs were simply dropped directly below the insect. Eggs have a conspicuous "capitulum" or knob on the operculum, which according to some recent research on Australian stick-insects, may attract ants to pick them up and bury them, which gives the nymphs a much better chance of survival. An egg of *A. titan*, together with other Phasmid eggs for comparison, is shown on Fig. 2.

In captivity nymphs accept various foodplants and in some localities it is evident that the insects progress from feeding on low growing foodplants when nymphs, to trees as they approach adulthood. With reference to my own culture stock, after becoming an adult, pairing has occurred frequently, varying from a short duration to several hours and at least one spermatophore (a sperm package) has been seen each week for several weeks.

Eggs appear to take several months to hatch, perhaps well over a year in some instances. Research is on-going in this area as I had only 20 viable eggs in 1992, rearing seven insects, two females and five males. These were kept in ventilated cages at near room temperature and reached maturity in approximately six months after being fed entirely on *Eucalyptus gunnii*. The females made their final moult in early March 1993, over a month later than three of the males. Exactly a month later the first eggs were laid and included several small or malformed eggs. At the time of writing (May 1993), eggs are all normal shape and the average

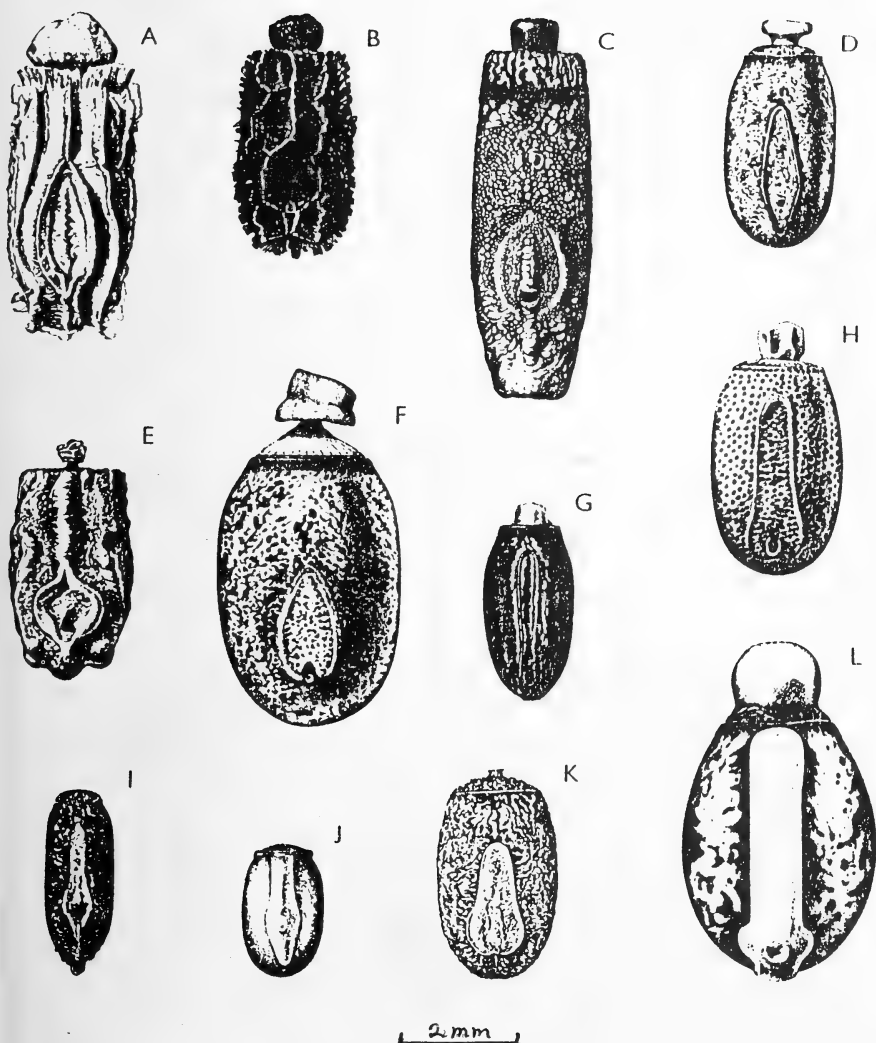


Fig. 2. Eggs of Stick insects from Australia. A = *Podacanthus typhon*; B = *P. wilkinsoni*; C = *Tropidoderus childreni*; D = *Didymuria violescens*; E = *Ctenomorpha chronus*; F = *Eurycnema goliath*; G = *tesselatus*; H = *Acrophylla titan*; I = *Hyrtacus tuberculatus*; J = *Sipyloidea filiformis*; K = *Pachymorpha squalida*; L = *Extatosoma tirtatum* (from Key, 1970).

from both females is 70 eggs per week, implying that the total number laid over an expected life-span of four to six months could be several hundred eggs per female. Research will be conducted on egg fertility and growth of nymphs, when a larger number of eggs to work on are available.

(Note added in proof: By 3rd October 1993, 2811 eggs had been laid by two females over a period of seven months. The maximum number of eggs laid in a week was 178, by both females, during the week ending 23rd August. They survived until early March 1994 when a total of 4104 eggs had been laid.)

In captivity in the Brisbane area *Leptospermum* species, *Eucalyptus* species and *Acacia* species (e.g. *A. irorata*) are commonly used as foodplant for nymphs and adults, which enjoy a good success rate despite the previous population feeding on pine, *Callistemon* and others. This flexibility in accepting a wide range of host plants should enhance the chances of survival in the wild.

Acknowledgements

I thank Tony & Katie Hiller (Mt. Glorius) for details of foodplants used in captivity and Gloria Larsen (Deception Bay) for a magnificent tour of *A. titan* territory in her area.

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THE LAST BUTTERFLY OF THE YEAR?

by Robert Bogue (9056)

On 20th December 1993 I was surprised to see a Peacock butterfly (*Inachis io*) at Bere Ferrers, Devon, flying rapidly and close to the ground beside the river Tavy. The weather was mild; around 50°F, but overcast, windy and damp. Presumably the insect had been disturbed from its winter quarters, as, until now, the last example of this species was seen on 23rd September, prior to the heavy and unexpectedly early October frosts.

BOOK REVIEWS

Camouflage and mimicry of insects. Photographs and text by Kazuo Unno. 7½" (19cm) × 11½" (26.3cm). 88 pages. 1993. Heibonsha Publishers Ltd. 5 Sanbancho, Chiyoda-ku, Tokyo 102, Japan. ISBN 4-582-52932-1. Price: Japanese Yen 2,900 (Note — The publishers do not have links with European/USA bookdealers. However, Shuji Misawa handles orders. Address to Shuji Misawa, Staff of *The Sun Magazine*, at the above address. Payment by International Money Order for Yen 3,290 (about £22) which includes Yen 390 postage by surface mail.)

Kazuo Unno's photography is more stunning than ever in this beautifully designed book, showing the world of camouflage and mimicry of insects. The reproductions often depict action shots of insects in the wild, with stunning colours and variety. The colour reproductions are outstanding, always very sharp and detailed. The Japanese text (with English summary) is minimal.

Many insect orders are included in three sections:

1. Camouflage. This section includes a remarkable full-page example of camouflage in the West Malaysian leaf-insect *Phyllium giganteum*, followed by nine extreme colour variations in the same species, reproduced on one page. The Orthoptera are well represented, with many bush-crickets and mantids included.

2. Warning coloration and mimicry. A series of often very colourful examples are used, including various butterflies and moths, ants and beetles.

3. Frightening display. The Saturniid genus *Automeris* is well represented, with a series of 12 "eye-spot" pictures and many other insects are included. Being biased towards Stick-insects, there are some superb reproductions of the defensive displays in the brightly-coloured winged species *Tagesoidea nigrofasciata* from West Malaysia and *Prisopus flabelliformis* from Brazil.

Pages 70-71 show a fine reproduction of the strange Lantern bug *Fulgora lanternaria* on a tree trunk.

I was asked to identify the Phasmida photographs prior to publication and it is a pleasure to be associated in a small way with this book. Some Orders are, however, only identified to family or genus level — scientific names are given, where known, along with the country of origin.

The author's pleasure in seeking insects from West Malaysia, of which he has a vast knowledge, is evident in the photographs, although many countries are represented. Those members who own a copy of *The Orchid Mantis & Insects of Malaysia* (Nippon Television Network Corporation, Japan, 1989) will need no introduction to the superb standard of photography and I highly recommend this new volume to anyone interested in insect photography or the subject matter covered. The Orthoptera enthusiast will particularly appreciate this book, with a beautiful cover design (and dust jacket) of two different colour forms of *Phyllium giganteum* on the front, and a Mantis on the back.

Kazuo Unno's other photographic books are probably little-known to many entomologists, although my own book collection includes fine volumes on beetles and South American insects. This latest book will enhance the author's reputation as one of the premier nature photographers in Japan.

Paul Brock

The insect and spider collections of the world by Ross H. Arnett, Jr., G. Allen Samuelson and Gordon M. Nishida — 2nd Edition. Flora & Fauna handbook, No. 11, 310pp. Sandhill Crane Press, Inc., Gainesville, Florida, USA. 1993. ISBN 1-877743-15-1 (cloth 9x6"). US\$30. (Order from American Insect Projects, 2406 N.W. 47th Terrace, Gainesville, FL 32606, USA. US\$35 including postage and packing.)

Having frequently used the first edition of this book (1986), I feel qualified to comment on its practical use to the researcher. The main aim of this book is to provide a standard, worldwide list of collections of insects and spiders useful for the location of specimens.

This edition is cloth-bound and much more suited to the entomological library than the 1986 ring-bound version.

The list of public insect and spider collections, arranged alphabetically by country, is followed by brief details of a few important private collections and a list of standard codes used for each collection mentioned. Not all minor collections are included *e.g.* many smaller British museums with insect collections are excluded from this volume, although the authors comment that these “are being described in several volumes”.

How has the content been obtained for this book? Curators of collections were asked to complete a questionnaire. The response varied and in some cases the original information from 1986 has been retained. However, the majority have up-dated information as at 1992. On a topical point, the authors have specifically mentioned the decrease of staff in curating museum collections — curators’ names are given and sometimes the names of professional staff, where known, along with the telephone/fax number. Some institutions did not reply and the variation in information about collections is wide. For example, American museums are often covered in detail, with information on the size of the collection, special collections/orders, and details of how specimens are housed. Some important museum collections are covered in just a few lines, but curators are given the opportunity to write to the publishers for fuller coverage in a future edition.

I give below brief details of how I benefitted from the first edition:
— Locating specimens: Details of collections may indicate how likely they are to contain specimens of interest. Addresses are located immediately, avoiding considerable research time on this task. (The new edition gives an “Index to Personnel” which may help in locating where an author deposited material. However, details of special collections held are given for only some museums.)

— Contacting Institutions: I have successfully contacted museums and others to arrange to visit or borrow type material. When taking a holiday abroad it has been very useful to make arrangements in advance and often to see locally-collected material.

My main interest is in stick and leaf-insects which are not specifically mentioned in the book. However, it has been straightforward to use the book as a guide and it would be suitable for the entomologist, regardless of order(s) studied.

This book is a must for those interested in the taxonomy of insects or spiders, or enthusiasts wanting to seek out insect collections when on holiday. Some out-of-date information is included, understandable in a publication of this nature, particularly where curators have not responded to the 1992 questionnaire. With a wealth of information on the subject matter covered, this book is very reasonably priced.

Paul Brock

ARE HOBBIES PREDATORS OF DRAGONFLIES?

by Arthur Cleverly (7265)

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Last July, on a sunny warm afternoon, my wife and I were walking along the towpath of the Kennet and Avon Canal by the side of Caen Hill flight of locks. Due to the steep hill that the canal has to climb here, the locks are close together and the large "reservoirs" of water for the locks form a series of quite large ponds.

My attention was drawn to a hobby, *Falco subbuteo*, a rare enough sight in this area to attract attention in any case, regardless of what it was doing. This falcon is distinctive with its long sickle-shaped wings and short tail that give it in flight a rather giant swift-like appearance, and this particular hobby's actions were giving it a very swift-like look.

It would climb to quite a height then swoop at speed and skim along close to the surface of the water, only to climb and repeat its performance. I could only conclude that it was taking dragonflies, for both they and damselflies were very numerous that afternoon. It was impossible to see if it was actually taking them, but I can think of no other reason for its high-speed swoops.

Each time that it climbed high in the air it was being mobbed by a few swallows. I thought that they were rather pushing their luck, since this falcon can take swallows and even swifts on the wing, but that afternoon it was something near to the water surface that had its attention, and it was ignoring the swallows and concentrating on the business in hand, or rather in beak, and it was I that gave up first!

I do wonder if this is a regular habit of these falcons and if anyone else has witnessed it?

RUSSIAN BUGS AT BOOTH MUSEUM

from *habitat*

The Booth Museum of Natural History in Brighton has bought an important collection of Russian amber containing insects over 40 million years old. The amber was mined from Kaliningrad on the Baltic coast for scientists from the Russian Academy of Sciences in Moscow during September 1992. This unique collection was offered to the Booth Museum in recognition of its fine work with fossil insects found in local rocks in Sussex and Surrey. It will be on show from the spring and it is anticipated that public interest in amber insects will be high following the popularity of the film *Jurassic Park*. Almost 700 individual insects representing dozens of different types have been identified in the 297 amber blocks. Further information from John Cooper, Booth Museum. Tel: 0273 552586.

COLOUR VARIATIONS OF THE STICK INSECT *NECROSCIA ROSEIPENNIS* SERVILLE (PHASMIDA = PHASMATODEA) IN SINGAPORE

by Dr Francis Seow-Choen (9847), Paul D. Brock (4792) & Isaac Seow-En

Address for correspondence: 54 Mimosa Walk, Singapore 2880, Singapore.

INTRODUCTION

Necrosia roseipennis Serville (Heteronemiidae, subfamily Necrosiinae) is a common insect in Singapore, deserving its scientific name “rosy-winged”. This colourful insect is said to be found over a wide area in South-east Asia, namely; Singapore, West Malaysia, Sumatra, Java, Borneo and the Philippines.

Habitat in Singapore

N. roseipennis feeds only on leaves of the wild cinnamon (*Cinnamomum iners*). Wild cinnamon is a quick-growing tree which attains a height of about ten metres. It is a common roadside tree in Singapore and its reddish young leaves provide a welcome break from the green monotony along many of Singapore’s highways and roads. Very few if any of these trees harbour *N. roseipennis* however and the insects are common only in the central forested areas of Singapore. Here, they are usually found amongst the canopy of the wild cinnamon growing along well-lit forest paths. The insect spends the sunlit hours hiding amongst the foliage to appear after night-fall to feed on the leaves of the same tree. This insect is a very choosy feeder and has not been known to eat the foliage of any other plant.

Description of adults

Average measurements of the adult sexes are as follows:-

Total length (excluding antennae and cerci): males 51mm; females 71mm. Head length: males; 2mm, females 3mm. Antennae: males 53mm; females 45mm. Pronotum: males 2mm; females 3mm. mesonotum: males 7mm; females 10mm. Metanotum and median segment: males 8mm; females 12mm. Fore femora: males 16mm; females 18mm. Mid femora: males 10mm; females 12mm. Hind femora: males 16mm, females 18mm. Tibiae length: fore, males 14mm; females 18mm; mid, males 10mm; females 12mm; hind, males 15mm; females 18mm.

Heads of both sexes are as broad as long and approximately the same length as the pronotum. The mesonotum is a little shorter than the metanotum and median segment. The cerci are robust and broadened at the base. A key feature of this insect is the granulated prothorax and

mesothorax. Antennae are black with seven white bands occurring at progressively shorter intervals towards the tip of the antenna. Eyes are large for the size of the insect and black in colour.

Three colour forms of the adult male have been observed in wild specimens in Singapore. The first colour form is dark green and this is the commonest male colour form. The insect is a beautiful green generally but the base of the antennae, mouth parts, tarsi and the lateral edges of the last three abdominal segments are buff to light orange. A white band runs above each eye along the edge of the mesonotum, the lateral edge of the elytra, and the hind wings. The white band in the mesonotum is flanked by two very thin black lines. Along the hind wing this black line is apparent only along the lateral border. The hind wings are a bright dark pink colour. The second form is the light blue-green form and has a very light green background colour and whilst the white band with black borders is still present the other markings are more or less indistinct. The membranous hind wings are a very light pink in this colour form. The third colour form is the red form and is a very beautiful insect. All its legs are a beautiful reddish-green colour. The antennae are of the same coloration as the two other forms. The underside of the thorax and abdomen are a bright green except the seventh and eighth abdominal segments which are brown. The head, prothorax and mesonotum are green flanked by brown at the sides. The upper surface of the abdominal segments are brown except for segments six to nine which are green with broken white stripes at the side as in other forms. The elytra of this form are brown. The membranous hind wings are a beautiful bright red. The hind wing border is brown with lighter spots which are present along the entire length of the border of the hind wing.

Females of this species occur in four colour forms. The light bluish-green form corresponds to the second colour form of the male. The dark green form is similar to the first colour form of the male but her colours are less bright and distinct. The third colour form is brown and this is the commonest female colour form in Singapore. The fourth colour form is a light brownish-green insect with a light brown mesothorax. Marking characteristics similar to the males are still apparent in these different colour forms. The antennae are also black with white bands at progressively shorter intervals towards the tip. The diagnostic white band bordered with the thin black line is seen in all forms and begins from each eye, the mesonotum, elytra and the hind wings, continuing to the last three abdominal segments.

The first author has photographed these colour forms and several of them are illustrated on colour plates OO and PP as follows:-

Fig. 1 shows the dark green form of the female on a wild cinnamon leaf.



Fig. 1. The dark green form of the female *Necroscia roseipennis* on a wild cinnamon leaf.



Fig. 2. The green-brown form of the female *Necroscia roseipennis*.



Fig. 3. A mating pair of *Necrosia roseipennis* on wild cinnamon leaf.
The female the brown form, the male the dark green form.

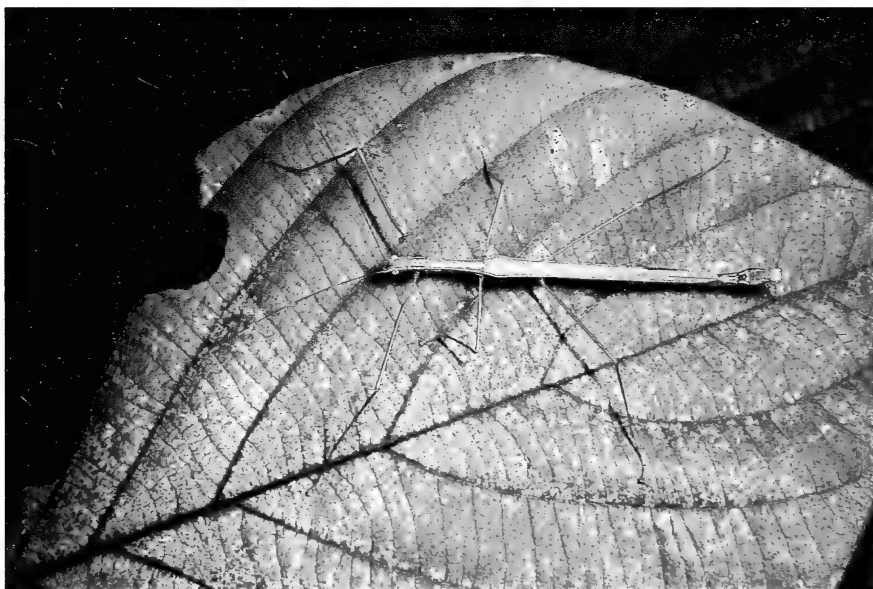


Fig. 4. The beautiful red form of an adult male *Necrosia roseipennis*.



Fig. 5. A female *Acrophyla titan* feeding on pine at Deception Bay, Australia.

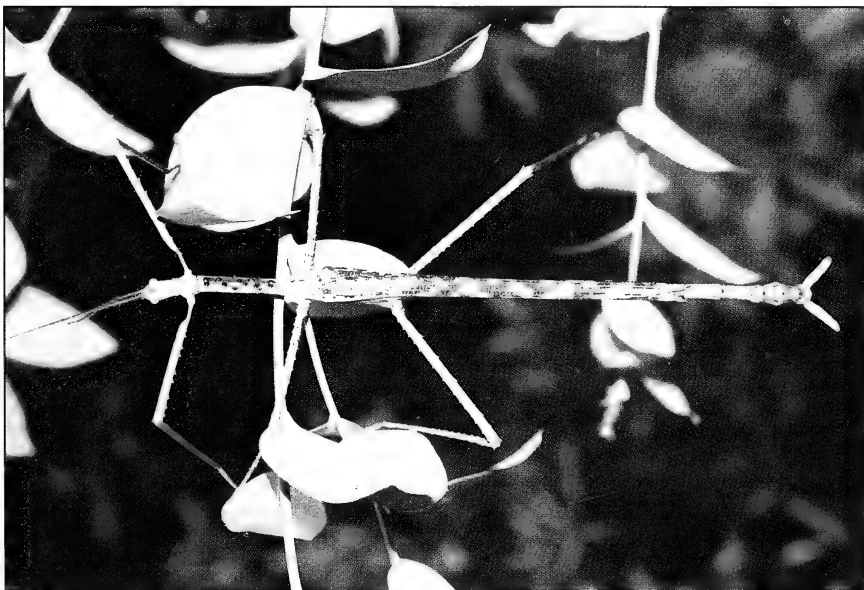


Fig. 6. A male *Acrophyla titan* feeding on *Eucalyptus gunnii* in captivity.

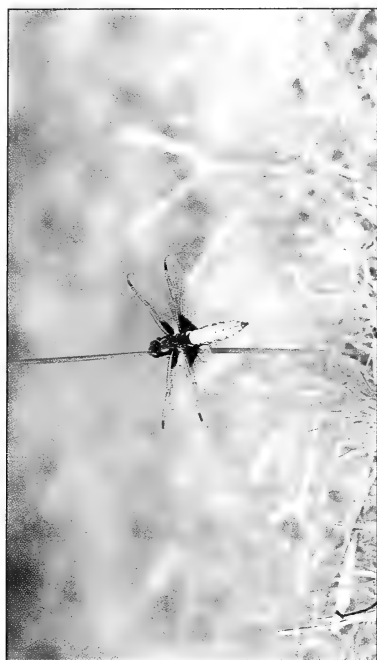


Fig. 8. Normal male of Broad-bodied chaser, *Libellula depressa*.



Fig. 7. Gynandromorph of Broad-bodied chaser, *Libellula depressa*.



Fig. 10. Location of Apiary, beekeeping by P. Petsas. Aynos Petros tower can be seen in the background.



Fig. 9. Normal female of Broad-bodied chaser, *Libellula depressa*.

Fig. 2 shows the green brown form of the female.

Fig. 3 shows a mating pair on wild cinnamon, the female of the brown form and the male of the dark green form.

Fig. 4 show the beautiful red form of the adult male.

Eggs

These insects are not prolific egg layers and captive insects lay only one to two eggs per day.

Rearing Pointers

Culturists will definitely need an endless supply of wild cinnamon. Cinnamon cuttings are quite hardy and the thick waxy leaves usually last at least one to two weeks. A high humidity is essential as dry conditions result in deaths as well as difficulties with ecdysis and deformities. In the forests of Singapore, humidity is usually above 80 to 90 per cent. Nymphs and males are especially sensitive to dry conditions.

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WASP PREDATOR AT MOTH TRAP

by J.C. Jones (19694)

With reference to Frank Botterill's account of wasp versus dragonfly (*Bulletin* 52: 261-262), I had a similar experience in the summer of 1993 — not with a dragonfly, but with moths.

Each morning as I emptied my moth trap I found an increasing number of moth wings minus bodies. These were mostly the smaller species of macrolepidoptera, such as the Marbled beauty, *Cryphia domestica*; Smoky wainscot, *Mythimna impura*; Pale mottled willow, *Caradrina clavipalpis*. Having once had an experience when I found a house sparrow, *Passer domesticus*, in the trap getting fat on the contents, I put it down to a bird picking the moths off the outside of the trap and letting the unwanted wings drop inside.

Then, one sunny morning, whilst I was emptying the trap, a Common wasp, *Vespa vulgaris*, appeared and flew straight in, without even circling, which suggested to me that it knew the way in off by heart. Inside, it proceeded to attack a Pale mottled willow, quickly gaining the upper hand. I regret to say that I didn't wait to see what happened next, as there seemed only one answer to the problem of my disappearing moths.

Since dispatching the wasp I have had no further trouble, so perhaps it was just a loner with a taste for moths!

AN IDENTIFICATION PROBLEM WITH SOCIAL WASPS

by Paul Cobb (9594)

343 Staithe Road, Heacham, Kings Lynn, Norfolk PE31 7EE.

While in the pub recently a friend presented me with a matchbox containing a hornet, *Vespa crabro*, which his mother had swatted and killed on the unfair assumption that it might sting — something this individual was never going to do, as it was a male. A couple of years ago I would have called it a hornet without a second thought, but as we are now being colonised by two continental species of *Dolichovespula* wasps, which can be large and hornet-like, I decided to key this specimen down properly, in order to learn the structural differences between the genera. It came out at *D. media*, but was too large and the wrong colour.

Once I had satisfied myself that it was definitely a hornet, I found that the problem lay in the first couplet of the key to social wasp genera in the Royal Entomological Society Handbook (Richards, O.W. 1980. *Handbk. Ident. Br. Insects* 6(3b): 31) where the hornet is separated from the other social wasps. My hornet had long hairs over much of the clypeus which made it, according to the key, not a hornet. Checking an old hornet specimen in my collection I found it too had these long hairs, so this character seems unreliable to say the least. The presence of bumps (tyloides) on the antennal segments is no longer any use for distinguishing male hornets from males of all other social wasps, as one of the new arrivals, *D. media*, has them as well. The position of the ocelli relative to the eyes is reliable, but can be difficult to see properly, as the eyes are quite narrow where they lap over onto the top of the head — change your angle of view slightly and you can get a wrong answer.

Oh for the days when any really big wasp could only be a hornet, before these foreigners confused the issue!

Changing the subject, the shielding problem I mentioned briefly in my article (*Bulletin* 52: 238-239) has now been resolved — I had gone astray at a point in the key where I had failed to appreciate the fine distinction between what constitutes a spine, and what is nothing more than a long thin tubercle!

RECORDS WANTED OF BUTTERFLIES ON THE SMALLER BRITISH ISLANDS

I am compiling records of butterflies for the smaller British islands and any contributions will be most welcome. Together with a note of species, please provide information, if possible, on sex, precise locality, date, and the presence or absence of hostplants. Please send to me, Roger Dennis, 4 Fairfax Drive, Wilmslow, Cheshire DK9 6EY.

A GYNANDROMORPH OF THE SOUTHERN LIBELLULA (LIBELLULA DEPRESSA)

by Peter G. Sutton (7388)

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The Southern libellula, also known as the Broad-bodied chaser, is a colourful species of dragonfly that is fairly common across the south of England where suitable habitats prevail. It can be found on the wing between the summer months of May and August patrolling weedy ponds and the margins of lowland lakes.

This dragonfly can be distinguished from other similar species by the generous chocolate-brown coloration at the base of each wing, and the relatively ovate abdomen.

The female of this species has an olive-green abdomen bordered by yellow spots, and the tip of the abdomen is distinctly red-brown (Plate RR, Fig. 9). The male has a "powder" of pale blue pruinescence on the abdomen, and the yellow flanking spots are much less prominent, being confined to the upper abdomen. There is no red-brown coloration at the tip of the abdomen (Plate RR, Fig. 8).

It was a day in early summer last year when I found the gynandromorphic form of this species.

Since the morning was sunny, I and my two colleagues, who at the time were performing a study of naturalised reptiles and amphibians in Surrey, decided to try and find one of the large terrapins which were living wild along the side of the brook. After a fruitless search, we stood, pondering over a small shoal of chub swimming in the shallow sunlit waters behind a small weir, and I heard the familiar clatter of gauzed wings. Two dragonflies were locked in territorial combat over a small temporary pond in the next field. As I moved closer and assured myself that the blue party was not one of the rarer skimmers, my attention turned to the second dragonfly, whose coloration I did not recognise. I followed it for a while until it finally settled on a dried nettle stem, and edged closer and closer with my camera, quietly clicking. Eventually, growing tired of my attention, the dragonfly hovered its bizarre form in front of me, looked at me in a displeased fashion and bolted across the field. This gynandrous specimen observed (Plate RR, Fig. 7) possessed coloration from both the male and the female of the species as follows: The prominent chocolate-brown wing markings of both sexes are present. The first two "large" abdominal segments adjacent to the thorax are olive-green, as for the female of the species. Other female characteristics include the prominent yellow markings flanking the abdominal segments, and the red-brown abdominal tip coloration. The most striking feature of this individual is the pale blue pruinescent coloration of the male which covers the remainder of the abdomen.

Other information on this and other species of British dragonflies can be found in Andrew McGeeney's excellent guide to British Dragonflies.

My interest having been aroused by the sight of this gynandromorph a full search was carried out on the extensive mounted and papered collection of dragonflies at the Natural History Museum, which produced a single specimen (*Libellula depressa*, Gardner collection, now in NHM) showing characteristics remarkably similar to mine, although this specimen did not clearly show either the red/brown markings at the tip of the abdomen, or the olive green markings at the top of the abdomen as in the photographed specimen shown on Plate RR Fig. 7. It cannot be ruled out that, if these characteristics were originally present in the Museum specimen, they have faded with age. This specimen could represent the first example of a British gynandromorph dragonfly. I have no idea of how Gardner interpreted the colour form in his collection. No published records, either, could be found as the result of an extensive literature search. The present article, therefore, represents the first published and illustrated record of a gynandromorph of a British dragonfly.

I would like to thank Mrs J. Silsby of the British Dragonfly Society for putting me in touch with Philip Corbet who supplied me with a list of the relevant literature. Thanks also to my fellow photographer Dave Brown and John Gumbrell and family for another idyllic summer's day, and especially thanks go again to John for imparting to us his rare local knowledge and for his invaluable help in other fields. The photographs of the dragonflies on Plate RR were all taken by myself.

REFERENCE

McGeeney, Andrew (1986). *A complete guide to British dragonflies*. Jonathan Cape, London.

HAIRY DRAGONFLY, *BRACHYTRON PRATENSE*, IN LEICESTERSHIRE

by Roy A. Frost (10011)

On 31st May 1993, Mary Buck and I were walking along a path, wooded at one side, at the Terrace Hills, near Belvoir Castle, Leicestershire (OS grid SK 7932) when we noticed a large dragonfly hawking in front of us. From the date, which would be too early for one of the *Aeshna* species, I suspected that it might be *Brachytron pratense* and was able to confirm this when it settled in long grass for several minutes, allowing me to photograph it at close range. I subsequently showed the photographs to Robert Merritt, who confirmed the identification, and sent one to Helen Ikin, who told me that it constituted a first Leicestershire record. It later transpired that one had been seen 16 days earlier further south in the county so our sighting is probably the second county record.

BEEKEEPING: ALIVE AND WELL ON THE GREEK CYCLADIC ISLAND OF ANDROS.

by John Hay (6878)

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Greece was, and remains, famous for its beekeeping. Indeed, some of its ancient philosophers were major contributors to bee lore. For example, Democritus (460 - 370 BC) who came from Abdera in Thrace, in the north-east of Greece, and provided "rudiments" of the atomic theory, considered honey as the elixir of life. He studied bees and thought that they arose spontaneously from bludgeoned ox carcasses. He also thought that "king" bees (females dominating a society including an insect one, was anathema to the ancient Greeks!), were produced from the brain and spinal "marrow" of the unfortunate ox; other bees originating from its "flesh".

Aristotle (384 - 322 BC), the great biologist and philosopher, who came from Stageirus, a Greek settlement also in Thrace, began to study bees around 343 BC. He was mainly interested in how bees originated, and why there were three castes (ie workers, drones, queen). Aristotle thought that bee larvae derived from olive flowers, and "king" bees produced workers and other rulers, whereas workers gave rise only to drones.



Fig. 1. Sign giving location of pure-thyme honey of St. Peter.

Such notions prevailed until the 17th century when the idea of "king" bees was dispelled by actual dissection of the insects, and then in the 19th century, Pasteur disproved the concept of spontaneous generation (abiogenesis).

Early interest by the Greek philosophers in bee natural history is likely to have derived from the widespread use of honey as a foodstuff. In classical Greece, a porridge was commonly consumed which comprised barley, milk and oil or honey. As was the case elsewhere, honey at that time in Greece was the most commonly used sweetener, and Socrates (Plato? 427 - 348 BC), certainly enjoyed his honey, mainly as an ingredient of desserts.

Thus it is pleasing to record that whilst on a visit (September 1993) to the Western Cycladic island of Andros, some 37 nautical miles from its port, Gavrión, to Rafina on mainland Greece, it was possible to determine that beekeeping remains an important part of Greek island country life.

The race(s) of *Apis mellifera* L. used for beekeeping on Andros could not be determined with certainty, since specimens for morphological examination were unavailable, and the beekeepers and their associates seemed completely uninterested in subtle entomological enquiries. However, *A. m. ligustica* Spin. (the Italian bee) was certainly present in small numbers in some locations.

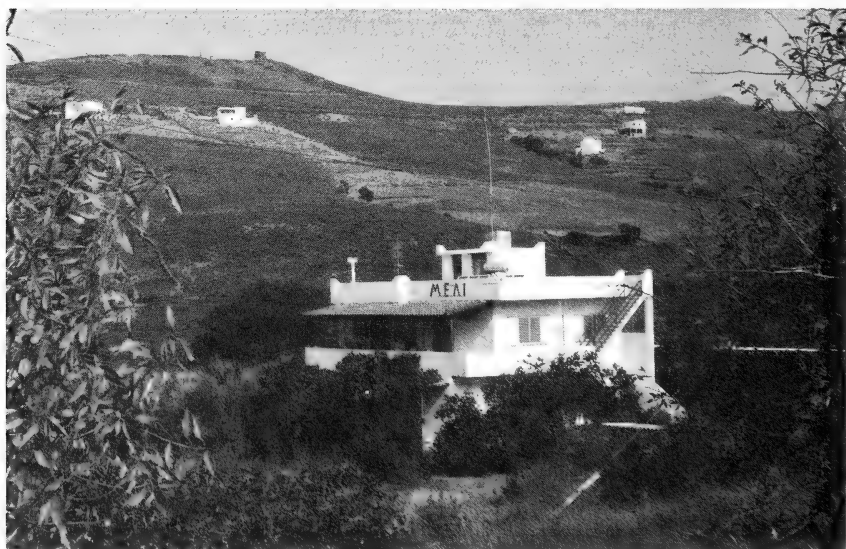


Fig. 2. Villa where honey is prepared for sale.

One of the major commercial suppliers of honey on Andros is located (Fig. 1) on the road between Gavrion and Batsi, a slightly developed tourist resort on the north-west coast of the island. The honey and other products of beekeeping can be obtained from a spacious villa (Fig. 2), beneath the hills where the main apiary is located (Plate RR, Fig. 10), alongside the 65 foot high circular (Mycenean?, Byzantine?) tower of Ayios Petros, thought to be used originally for protection of crops or mineral ores from the activities of marauding pirates.

Another commercial supplier of honey, with bee hives sited at other locations on the hills around the island, is to be found in the port of Gavrion (Figs. 3 and 4).

Andros honey (méli), like most other honeys from Greece, is deliciously aromatic. On the island, it derives its distinctive flavour from the predilection of the honey bees for the ubiquitous herb, thyme (thimári), a member of the mint family. During June and July, the hill areas of the island are resplendent with the small bushy, greyish-green foliated and purple-flowered wild plant (*Thymus vulgaris*). The herb has been used from ancient times in Greece, where it signified grace and courage, being sacred to Aphrodite (Venus) and Ares (Mars) respectively. Thyme, of course, has an essence, thymol, which has antiseptic, disinfectant and preservative properties. It is also used widely in its own right as an additive in Greek culinary practice.



Fig. 3. Poster indicating pure thyme honey for sale. Beekeeper at Gavrion is Metrou M. Zoumpeph.



Fig. 4. Honey for sale at Gavriion. Jars, tins of honey, wax and combs can be seen, as well as hive frames in the foreground.

The Greek thyme honey is part of the traditional village breakfast and is eaten in accompaniment with bread, cheese, yoghurt, olives, eggs, coffee, tea or warm goats' milk. On Andros a particular speciality is honey balls, which is a combination of almonds and honey. Honey is used in, for example, traditional Greek foods such as melon salad (Pepóni Salata), yoghurt sauce (Yaúrti Sálsa), as well as in a range of desserts, some of which would have been recognised by the palate of Socrates, and in many cakes and sweets (Glikismata ke Zaharotá) including the outstanding St Basil's yeast cake made for consumption on New Year's Eve, and one of the most delicious of Greek sweetmeats, hot honey doughnuts (Lukumádhēs) much beloved by this author accompanied by Greek coffee (Kafé Ellinikó).

A CONVULVULUS HAWKMOTH NEAR FOLKESTONE, KENT

by Mark Tansley (6531)

On 2nd October 1993 a female *Convolvulus* hawkmoth (*Agrius convolvuli*) was found on the door of the Butterfly Centre near Folkestone. The moth was in good condition except for a slightly torn forewing and when handled she ejected a small amount of meconium, which suggests she may have been the offspring of an earlier summer immigrant. However, although she was kept warm and well-fed she failed to lay any eggs.

ECOLOGY AND CONSERVATION OF BUTTERFLIES — CONFERENCE REPORT

by *Martin Harvey (5772)*

12 Carter Road, Lane End, High Wycombe, Buckinghamshire HP14 3JD.

Anyone who was not at this conference missed a thought-provoking, inspiring and thoroughly enjoyable three days. Organised (extremely well) by Butterfly Conservation in their Silver Jubilee year and held at Keele University last September, the conference was attended by some 200 delegates from all over the world. They represented a wide range of interests, from professional research lepidopterists and conservationists through to interested amateurs and ordinary Butterfly Conservation members.

The conference programme was packed, with 26 papers presented during the three days, along with an interesting selection of poster presentations. Subjects covered included butterfly monitoring and population changes, global diversity, particular endangered species, habitat management and a stimulating final session on butterfly conservation throughout Europe, which put the problems of UK butterflies into perspective, and produced a strong feeling among the delegates that more should be done to co-ordinate conservation across Europe.

Although there were inevitably some depressing stories regarding habitat and species loss, the overall tone of the conference was a positive one, stressing what can be achieved when resources are available and precise biological requirements are known. As with any good conference, ideas were constantly being exchanged, both in the lecture hall and in the bar afterwards. The standards of presentation of the papers was extremely high, with speaker after speaker clearly demonstrating not only a profound knowledge of their subject but also an obvious commitment to the cause of insect and habitat conservation.

As someone interested in the conservation of all groups of invertebrates I have until now been a little wary of Butterfly Conservation's approach, with their obvious emphasis on one part of the Lepidoptera. However, other insects were not neglected at this conference: there were papers on butterfly parasites (which, I should add, stressed the importance of conserving parasites along with their hosts) and on moth conservation (an admirable presentation by Paul Waring, who raised a few eyebrows by suggesting that butterflies might be considered as aberrant day-flying moths!). Perhaps more importantly, however, many speakers stressed the value of butterflies as indicators of the quality of habitat for invertebrates generally. Butterfly biology is relatively well-known, they are relatively easy to survey

consistently, and they are good "ambassadors" for invertebrate conservation. This means that practical conservation management for butterflies can be attempted with some degree of confidence, the results of such management can be assessed, and the knowledge gained can be applied to other groups.

A book, *Ecology and Conservation of Butterflies*, with contributions from most of the conference speakers, is due to be published next year by Chapman and Hall. I would recommend that anyone interested in invertebrate conservation should obtain a copy of it, and as well as supporting the conservation work of the AES to consider joining Butterfly Conservation. Judging by this conference, Butterfly Conservation is rapidly becoming the strongest voice to be heard encouraging any sort of invertebrate conservation in this country. If those of us with an interest in other insect groups (as well as butterflies) play an active role we can ensure that the needs of all insects are taken into account.

SIXIEME SALON INTERNATIONAL DE L'INSECTE, PARIS

by Neil West (9102)

The Old Farm, Harby, Newark, Notts NG23 7ED.

Expecting to have major problems travelling to the venue, it was extremely satisfying, if not amazing, to have driven from Lincoln (via the ferry, of course) with not even the smallest navigational error. It would have been even easier had most of the traffic not persisted in driving on the wrong side of the road. If finding the Porte de Champerret was easy, locating the underground car park entrance was definitely not. The exhibition complex is built on a sort of huge roundabout which I circuited four times before turning into the two foot wide entrance, cleverly hidden behind a set of traffic lights and a pedestrian crossing. Many harrowing miles (and fathoms) later I parked the car and was uplifted to a central courtyard, where the exhibition hall, one of several skirting the area, stood impressively. The entrance fee at 35ff (about £4.50) caused a brief assessment of the francs situation, but after all, this was a prestige event.

This was the second day (Saturday) of the three day event, and it was surprising to see that two hours after opening very few visitors were present. By early afternoon though, the situation had changed and it was almost impossible to approach the majority of the tables. The hall was large, airy and very well prepared. A large flight cage, surrounded by potted trees, contained tropical butterflies, and along with display screens hung with framed photographs, confronted the visitor on entry. These wildlife photographs were probably the best of their type I have seen and although 800ff (£90) for an A2 colour photograph sounds expensive, each one was a bargain at the price.

After a rapid trip around the hall the initial impression was one of huge quantities of deadstock on display: table after table with box after box containing row after row of set and mounted specimens; far too many, I would suspect, to really take in, even for the dedicated collector with three days to spare. But for those so inclined, it was a veritable haven. By contrast, livestock on offer was disappointing, Nigel South having more than all the other exhibitors put together. Phasmids were perhaps the largest representative group, attracting large crowds later in the day, while Coleoptera were fairly numerous and obviously very popular. There were lesser numbers of spiders, scorpions and escargots.

It was nice to meet some of our Continental colleagues including M. Fleurent with his superb blown larvae, Noel Mal of *Ecdysis* and Dominique Ades who was showing hybrids of *Graellsia isabellae* X *Actias luna*, *selene*, *heterogyna* and *truncatipennis*. Other exhibitors were from Japan, Czechoslovakia and Switzerland and *Cetonia* had a large stand. There were very few bookstalls, E.W. Classey being most prominent, but plenty of dealers were offering a very wide range of equipment.

It was obviously a very successful exhibition, well presented at an excellent venue and with only a couple of "moans". The catering was inadequate, especially as there were no official "passouts", and the prices, particularly for livestock, were generally double those found at Leicester and Kempton. However, a very worthwhile trip.

(Reprinted by kind permission of the Entomological Livestock Group — Editor.)

FRENCH INSECTS PROTECTED

We have received notification from the French Ministry of the Environment setting out a long list of insects which it is now illegal to collect or use in any way. This list includes not just those in Metropolitan France but also those in French overseas territories. Amongst those listed are *Lestes dryas*, *Aeshna grandis*, *Mantis religiosa*, *Decticus verrucivorus*, *Dytiscus latissimus*, *Cerambyx cerdo*, *Saturnia pyri*, *Aporia crataegi*, *Clossiana dia*, *Nymphalis polychloros*, *N. antiopa*, *Maculinea arion*, *Satyrrium w-album*, *Cerura vinula*, *Naenia typica*, *Chilodes maritimus*. These species have the same protection as those designated under our Wildlife & Countryside Act and while we do not know the actual penalties that could be imposed, members proposing to collect abroad (similar restrictions exist in Germany and other countries) should take care and familiarise themselves with the appropriate regulations. The French Edict is to be found in the *Journal Officiel de la République Française*, issues of 23rd and 24th September 1993, pages 13236-7 and 13272. If in doubt, try asking the French Embassy in London.

THE 1993 PARIS INSECT EXHIBITION

by Paul Brock (4792)

"Papillon", 40 Thorndike Road, Slough SL2 1SR.

The publicity leaflet boasted "The World's Biggest Entomological Meeting" and I was interested to see how the Exhibition compared with the very popular AES Exhibition held annually at Kempton Park Racecourse.

Pierre-Emmanuel Roubard and Willy de Ruyter were the main organisers of this meeting on behalf of the "Groupe d'Etudes des Phasmes" (GEP), with many helpers.

Mr Donskoff of the Entomology Laboratory, Museum National d'Histoire Naturelle had kindly arranged for me to examine stick-insect type material on Friday 12th, and when visiting the Exhibition the following day, I was surprised to learn that 7,000 had visited on day one.

Keen to seek out a "British" viewpoint on this, I spoke to the representatives from E.W. Classey booksellers, who were delighted to be associated with this event for the second year running.

This is the first year of six in which the Exhibition was held at Espace Champerret, huge Exhibition halls near the metro station Porte de Champerret. The visitor from England would definitely notice the difference; it was easy to walk around all the tables and exhibits. Lighting was excellent.

There were interesting exhibits of live stick-insects, in addition to set examples of species collected in French Guyana displayed by GEP. The Museum already mentioned had impressive display boards and a mini free-flying butterfly exhibit was a magnet for visitors. There were also interesting insect photograph exhibits.

I was amazed at the amount of deadstock for sale, including numerous beetles. Even a few giant *Palophus* stick-insects from Africa were on sale, at a price. I have never seen them offered in the UK. Deadstock of most orders was readily available.

A lepidopterist friend near Paris had already informed me about the likely poor representation of livestock. This was partly accurate in terms of butterfly and moth livestock, but there were plenty of phasmid and spider livestock, together with some cockroaches, spiders, scorpions, mantids, beetles etc.

Apart from E.W. Classey and Sciences Naturelles, bookdealers were scarce and there were hardly any secondhand books on offer. Entomological Societies were housed in a separate section of the halls.

From my point of view the visit was very worthwhile and it was a pleasure to meet friends from various European Countries, for the first

time in a few instances. I noticed a few familiar faces from the AES Exhibition, who would have been impressed by the catering facilities.

I "shot" a 13 minute video film showing the wide range of items on offer/exhibit. (Which I hope Paul will show at the AES AGM - Editor.) Willy de Ruyter attempted to make a getaway when I offered to film him, but is visible very briefly! Many thanks are due to Willy, Pierre and other helpers for the amount of work put in, and they are to be congratulated on attracting such a huge turnout from all over Europe. The Exhibition was open between 9.00 and 18.30 on each of the three days.

Finally, an important note. An interesting 48 page A4 size booklet was on sale for 80 French Francs (about £9.50) produced by GEP especially in time for the Exhibition. I have not had time to fully read this publication, but it deals with an Expedition to French Guyana by several of their members, and includes good large-scale drawings of some species seen (including some unidentified). The participants have included their impressions of Guyana and sections include notes on localities, listings of all species associated with French Guyana and interesting notes and drawings on parasites by Philippe Lelong. The booklet, titled "*Le Monde des Phasmes. Special Guyana Francaise*", includes a front cover colour photographic reproduction of *Stratocles variegatus* (Stoll.)

(Reprinted with author's permission from *Phasmid Studies*.— Editor).

MOTH RECORDING

by S.R. Lucas (9873)

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I wholeheartedly agree with A.M. Emmet's comments regarding the neglect of recording the more common species (*Bulletin* 52: 228). I have almost completed a long, and at times arduous, task of transferring both macro and microlepidoptera records for Carmarthenshire (vice county 44) from paper to computer and I am astonished, or perhaps I shouldn't be, at the varying levels of biological recording. Whilst there is a general and understandable bias from the microlepidoptera towards the macrolepidoptera except for a handful of fairly easily recognisable species, this, coupled with a lack of active recorders in the field, both historically and in recent times, has clearly allowed for gaps in our records.

Although county recorders rely heavily on "volunteers" to provide records it is my opinion that if somebody is going to go to the time, trouble and expense of species-recording then there should be minimum standards in order to provide useful data: a six-figure grid reference, a date, basic habitat description, and a full list of species for that observation. All data should also be forwarded to the relevant county recorder.

In addition I should like to propose two ideas which might encourage observers to produce more complete data. Firstly a register of specialists, by county, who would be prepared to give assistance in the identification of difficult species. This could be published annually along with the general register of members. Secondly simple identification keys to be produced by specialists and published in the *Bulletins* when available. Such keys could not replace the use of books but would at least serve to stimulate further interest before committing oneself to the purchase of expensive literature.

It is obviously proper to record the less common and rarer species but to neglect the common ones could ultimately mean that trends in species are being missed. For the record, the Plume moth *Emmelina monodactyla* has been recorded in v.c.44 at Kidwelly 22/409074 and at Rhandirmwyn 22/782441. These records have been sent to A.M. Emmet.

BOOK REVIEW

Larger moths of the London area by Colin W. Plant. A4 hardback, pp.xxii + 292. London Natural History Society, 1993. Price £19.95.

One has only to look at the "acknowledgements" cited in this fine work to realise that it is extremely comprehensive, being the result of the records and help of over two hundred individuals and organisations, collated and brought together by Colin Plant. This book is also an account of the past as well as the present distribution of species, records having been culled from all the journals and books (which take two pages to list), both old and new, which have any bearing on the moths of the London area. This results in all records for rare, vagrant or otherwise "occasional" species being detailed in full. The author has been meticulous in his criteria for inclusion, having insisted on expert confirmation of "difficult" species. Taking in an area of 20 miles from St Paul's Cathedral, some 1,250 square miles are included, making the book essential to all those in the surrounding counties.

The introductory pages explain the parameters used in the book: the area covered; the geology; habitats; past records; the status and the distribution (which is taken up to the end of 1991); categorisation. This last defines, and lists the number of species into, residents, vagrants, doubtfuls, very local species, etc.

The text is extremely well laid out in double column, with a distribution map for each species (except those where all records are cited) showing pre- and post-1980 records. Accompanying the book is a cellophane sheet for use as an overlay onto the maps when it then shows different features, these being: (a) London's boroughs; (b) areas with chalk; (c) heavily built-up areas; (d) wooded areas; (e) national grid references and (f) the tetrad system.

The print layout is clear, families and subfamilies delineated in large bold type. Under each species, to the left, in bold type, is the Bradley & Fletcher (1986) number, followed by the scientific name then the vernacular name justified right. Below this name are the years in which the species was first and last recorded. Then follows a brief summary of category and status, then voltinism. Clearly labelled "LFP" all foodplants (when known and if applicable) are noted. Finally we have a paragraph of general discussion which often makes for interesting reading and draws our attention to *lacunae* in knowledge. One particular item that caught my eye was that I did not realise the Shaded broad-bar (*Scotopteryx chenopodiata*) was formerly known as "The Aurelian's curse", but that the foodplants this very common moth utilises in the London area are completely unknown!

The indices (all except the last called "appendix") are both extensive and useful. They are really a form of statistical analyses, the second cross-referencing, under Bradley & Fletcher number, scientific, vernacular and vice-county occurrence. The third gives the number of tetrads in which each species was recently recorded. The fifth is a gazetteer of place names related to tetrad numbers.

Over 700 of our macrolepidoptera are recorded in this book, such a high percentage of the overall total that it will be of use to anyone anywhere, not just London, for it is full of useful information, particularly for larval foodplants and for listing those species for which critical examination is necessary. The author, his helpers and the LNHS are to be congratulated on such a fine production. It is so well produced that it is a pleasure to handle and a joy to read. My only criticism is that although our *Bulletin* has been bi-monthly for the past five years we are stated to be quarterly! The Royal Entomological Society has also been given the wrong postcode, the only *typo* I spotted.

Brian Gardiner

BUTTERFLY FESTIVAL 1994

The Butterfly Festival has once again been arranged by the Surrey and London branch of *Butterfly Conservation* in conjunction with the Field Studies Council.

The Festival will be held at the Field Studies Centre, Juniper Hall, Mickleham, Dorking, Surrey on Saturday 23rd and Sunday 24th July 1994.

Experienced guides will take visitors to local butterfly habitats. Each day there will be a slide presentation by experienced lecturers on butterfly conservation and a photographic workshop on photographing butterflies.

There will be live exhibits of both British and tropical butterflies and displays featuring conservation, biology, paintings, butterfly embroidery, prints, stamps and books. Nectar and larval foodplants will be on sale — all especially grown by society members. There will be many more attractions especially for the children. Refreshments will be available on both days.

As part of the Festival there will be a Photographic Competition for 35mm colour slides of adult British butterflies in a natural setting. Entries will be judged by the Warden of the Field Studies Centre Mr John Bebbington FRPS. First, second and third prize winners will receive £50, £20 and £10 respectively, which will be presented at the Festival where the winning entries and runners up will be on show.

Copies of rules and entry forms (which must be returned by 1st June) for the competition can be obtained by sending a SAE to Mr Dennis Newland, 27 Furze Lane, Purley, Surrey CR8 3EJ.

ALDER MOTH IN STAFFORDSHIRE

by Jan Koryszko (6089)

On 2nd August 1993, while beating in Weston Sprink, I came across a larva of the Alder moth (*Acrionicta alni*) on hawthorn. I have not previously encountered this moth which was reported early this century nearby at Normacot and Blythe Bridge by B. Bryan. It is nice to know it is still in the area. Other Staffordshire records are from Madeley, where larvae have been found on cherry and elm; on hazel at Whitmore Common and reported on hawthorn and sycamore at Trentham by R.G. Warren. Five moths were reported taken at sugar in Burnt Wood in 1934 by H.L. Burrows. It has also been taken occasionally at light in Keele and Wall Grange. It has also been taken, most often as larvae, at localities such as Coombes Valley, Loynton Moss and Hem Heath Wood, but generally it is not that common in our county.

MRS MANTID NOT GUILTY?

In her first Reith Lecture this year, Marina Warner quoted some recent research by two entomologists which showed that the female mantid only ate her mate when being closely observed by entomologists (or other voyeurs). Using hidden cameras spying on other mantids, not under human observation, they found that these were not eating their mates. It is, I think, well-known that some mammals kept as pets, such as rabbits and hamsters, will eat their new-born young if too much disturbed at the time; something that rarely happens under feral conditions. Interestingly, a recent paper on Costa Rican spiders has recorded mated pairs happily living together in the same web. So do we need to revise our opinion of these (alleged) male-eaters, or, as I suspect, does it depend on the species? Some do; some do not.— Editor.

DE FUS' TIME IN TOBAGO

by Leigh Plester (2968)

Ylä-Muuratjärvi, 41800 Korpilahti, Finland.

I once calculated that by not shaving since April 1964 I had saved something like two weeks of my life. The time gained, I found, had been usefully employed on such tasks as cleaning the frass from caterpillar cages. Since hygienic offspring become healthy adults, I had, it is clear, done my bit for local populations of butterflies and moths and — who knows — perhaps saved some species from eventual extinction on this battered planet. As this mental effort took place ages ago, the accumulated days must now be considerable, I mused, in 1989, after my second trip to Borneo. And, to confess, it was the latter matter that was now worrying me, as every time I disappeared East, upon arrival at the airport I discovered I had lost something like five and a half hours, a reduction in my life span, which I felt, despite my inevitable return to Fennoscandia, could never actually be recouped.

And then it hit me, as it had likewise struck many of my brethren in a bygone age — Go West, young man! Thereby, in my case, replenishing the lost hours of my existence. Fate decreed that this “west” be the Republic of Trinidad and Tobago, as indeed it had ruled that my ex-pat Brit companions in Finland be Nick (of *Tuak* fame) and Malcolm “Mac” Brown (born out of Much Wedlock, or some such heathen place over the border from my home county of Worcestershire; married, like me, to a Finn; and a man hell-bent, again like myself, on putting his vile thoughts and shaky pictures on Finnish TV).

If you are seeking the ultimate in diplomacy, forget Mac; he rides rough-shod over everyone, whatever their nationality or race. But Mac and Nick not only set up a liaison with Trinidad and Tobago's government and tourism development authority, they also went over there for a week in March 1990, sussed the place out, and then proceeded to get us a reduction of around 80% on the going rate at the posh Grafton Beach Resort at Black Rock, on the coast of the lesser island of Tobago about twenty minutes from the airport. This achievement was duly registered as one of the more tranquil triumphs of Mac's “well you bee-well should!” approach to all and sundry.

“It takes us about 20 minutes,” Mr Cecil Lyons confided, when Nick and I had arrived at Crown Point airport in the hot, muggy darkness of May Day 1990. Worthies in Tobago are always Mister, Mrs or Miss — or in my case, plain Miser. Somewhere in tow in a second taxi Nick had his whole family: his long-suffering wife, Sonja, plus their three Finno-British bisto kids. My own genealogical caboodle was in Finland, awaiting “Fus’ Time in Tobago an’ Fus’ Time in Grenada” later in the year.

Moths danced fleetingly in the glow from the headlights of Mr Lyons's brilliant cream left-hand drive Tobago limousine, while he agreed that it would be no trouble for him, amateur ornithologist as he was, to locate some hummingbirds for us, in daylight, of course. The limousine — or one of those American jobs you can get lost in — drove on the left, a legacy of the Brits. The moths, flitting with abandon, seemed to be nothing more than miserable dun-coloured noctuids. A cold Carib beer at the hotel almost lightened my spirits, but I couldn't help gazing broodingly out over the dark Caribbean from which — judging by tracks visible next morning — giant leatherback turtles were even now lumbering up Grafton beach to lay their eggs in the sand.

The subject of my chagrin was my cameras and film, which the Customs had just seized, politely but firmly. The afternoon before we left Finland a telephone call had come from the Tourist Development Association saying, in typically blithe West Indian fashion, "Please put off your trip; your film permits are not yet in order." Mac had erupted — "Well they bee—well should be!" The rest of us didn't stop there: we went right down the alphabet as far as "S". Upon our arrival in Tobago on this May Day evening, Mac was still in Finland, due to arrive a week later with his second cameraman prior to our all going, as desperate men, "to the top", resulting in the Minister himself over in Trinidad ordering the Customs to release our gear forthwith.

But back to our first evening. I perked up a bit when Nick suggested after a couple of beers at the Grafton that we go for a walk up the road. Opposite the hotel there was a bus stop with a tarmacking machine parked next to it. The vehicle had obviously been there for some time, as it was festooned with large spider webs, in the centre of which sat large, bright arachnids of the orb-spider type. There were a few insects around the street and hotel lamps — a Borneo bug-hunter would have died of laughing — and the geckoes of the East were made conspicuous by their absence. Crickets chirped and frogs piped, but on a strictly individual basis. I perked down a bit.

Although the West Indies boasts almost 300 species of butterflies, I did not encounter many of them on Tobago, despite constantly carrying my net, boxes and forceps in my miniature jeep. For information I obtained a second-hand copy of *A Field Guide to the Butterflies of the West Indies* (1975) by Norman Riley from Mr John Trotter, one of our AES book-sellers. A couple of books on flowers and trees, purchased locally, helped flesh out my knowledge. My bird book, courtesy of E.W. Classey Ltd, was *Birds of the West Indies* by James Bond. The author's name was coined by Ian Fleming for his 007 series.

Employing almost solely loose-screw freelancers to make their wildlife films, the Finnish Broadcasting Company is well aware of the damage the insane can inflict, when aroused, in a confined space. It has thus

learned the hard way to be broad-minded so, although I had contracted to make one bird film and one insect film, I was able to concentrate on the birds without fear of being sent to Siberia, and in the end what emerged was a pair of films romantically entitled "Conquerors of the Crusoe Isles". From the ornithological standpoint Tobago is the precise opposite of Borneo. Birds of all shapes and sizes abound and when I learned that the next island north, Grenada, belonged to the North American faunal region, whereas Tobago lay in the South American region, I naturally opted for some sort of biogeographical treatise on the birds, comparing the islands the best I could using the material shot.

The "conquerors" concept is most evident in the tropical mocking bird and cattle egret, both of which have spread into Trinidad and Tobago within living memory. The cattle egret has a professional interest in insects. It is found in small groups almost wherever there are cattle or goats on the islands. These large grazing animals stir up small fry like grasshoppers that form the egrets' staple diet. In fact the cattle egret has spread right across the tropics from its original home in Africa, a conquest that has obviously put pressure on some insect populations, since the pure white bird, although small as herons and their kin go, is very large in relation to wagtails, tits, swallows and other insectivorous birds. A large size means a big appetite.

Robinson Crusoe's cave, as envisaged by his creator, Daniel Defoe, is located at Crown Point, Tobago, just behind the airport. The Tobagoans have produced an entire booklet called *Crusoe's Only Isle* in which they very convincingly show that it was indeed Tobago to which Defoe was referring when he marooned his hero on a tropical island for 28 years, without so much as a kite net or insect repository, let alone a fair maiden to give him the box. Having established what my basic theme was to be, and being entirely free of Nick's and Mac's plans for video contraption TV programmes, I hired a "Sunny" jeep and went in search of birds. For the first week I was, of course, without my cine cameras and film, but I had the normal tourist single lens reflex gear and was thus able to shoot off a lot of slide film, as well as monochrome. I also got through a lot of Carib beer. Of course, Mac went one better: he persuaded the Carib brewery to present us with 50 cases of beer - free - two days before I left.

During the week's forced respite and subsequent three week filming stint, I was able to devote quite a lot of time to insect catching. At the hotel I had a whole double room to myself, complete with air con and balcony, so could spread my catch out on the spare bed without fear of some soused ex-pat lumbering in when the bar closed and planting his sit-me-down on the highlight of the day.

Tobago is elongated in a south-westerly/north-easterly direction, its left extremity being occupied by tiny villages, the capital (called — cor

blimey! — Scarborough), and a twisting network of roads running in lackadaisical West Indian fashion from one hamlet to the next. Who could resist taking a peek at places named Moriah, Hope or Mason Hall? Too pansified? Then how about Bloody Bay? For the adventurous there are plenty of name-sakes: Glamorgan, Pembroke, Speyside, Cargyll, and finally, Charlottesville, an idyllic little haven at the end of the road on the north-east coast. And hither and thither concrete pillboxes pop up that turn out to be Presbyterian churches. Often I would spend a day right up the island some 40 kilometres away, perhaps crossing through the Forest Reserve with its low-lying, almost impenetrable, rain forest lining the road, to return to the hotel in time for tea, but first to see whether I could cross from the windy Atlantic side of the island to its calm Caribbean shore in my Suzuki jeep in less than ten minutes.

I set out along a winding inland route on 4th May with the intention of hunting for butterflies. A flock of dark, long-tailed birds with ridiculously large, Roman-nose beaks attracted my attention. I pulled the jeep off the road. The birds were broad-billed anis which, strangely enough, are related to the cuckoos. They not only live in flocks, but also lay their eggs in communal nests in a most uncuckoo-like way. Hopping from bush to bush, the birds soon progressed on their way, snapping up insects as they went. Tiny yellow butterflies flitted about among the wayside scrub in precisely the same manner as the Grass yellows of South-east Asia. Indeed these Tobagoan species also belong to the genus *Eurema*. They were much smaller than any of the British whites, being dwarfed even by the slim little Wood white. Being able to tell a Brimstone from an Orange-tip at a glance, and having an inflated ego to boot, I thought I'd soon be airing my knowledge about these tropical fellows, but on looking them up in my book I quickly realised how difficult it would be to tell many of them apart.

Basically, they have a forewing width of about 15mm (measured from thorax to tip) and are variously coloured in yellow (on the forewing) and white (on the hindwing), with dabs of brown shading. Being small insects, they are easy to pursue and catch. It is when you have one in the net that the identification difficulties begin, however. The False-barred sulphur (*Eurema elathea*) differs from the Barred sulphur (*E. दौरा*) in that the tone of the bar extending along the inner edge of the forewing in the male is black instead of grey. The bar in both cases lies, as it were, astride an orange marginal stripe which ceases 3 or 4mm from the wing base in *E. elathea* males owing to the black bar dipping down to the forewing margin. In a small butterfly intent on flapping its way out of a net this subtle difference in shades is by no means a "clincher". And supposing you are unfortunate enough to secure a female? Well, the females, Riley records, are almost impossible to distinguish! To

complicate matters still further there are, as you might expect, sneaky dry and wet season forms. In the wet season both species have sandy coloured undersides.

I did in fact catch a couple of females. These have yellowish forewings and white hindwings, with a strong black border to the forewing and a broken one which tends to peter out altogether halfway along the inner margin of the hindwing. There is no trace of the male's grey or black bar along the inner margin of the forewing, which explains why it is so difficult to separate the females.

Thankfully not all the butterflies I saw along the road were as difficult to identify. You would have to be even dimmer than I am not to be able to spot a Red rim (*Biblis hyperia*) which, as its name implies has a bright red rim to its hindwings. Riley says this is unique — something to be thankful for in the West Indies. Otherwise the wings are velvety dark brown, with paler forewing margins. The underside is similar but looks more like faded black jeans. This butterfly, like sulphurs, is a lazy flier. Its modest forewing width of around 30mm would be put to good use in a fast-flying European fritillary, but the jolly old Red rim prefers doddering about over open ground where (states Riley) it is attracted to rotting fruit. The flight time is year-round and the insect is distributed from Mexico to Paraguay.

Take an Asian *Neptis* (sailor), boil it up for a few minutes in a saucepan, strain off the juice, and you are left with a St Lucia Mestra (*Mestra cana*) from the West Indies. The pale, washed-out look in the female is tinted with orange, grey and brown, her underside being an extremely pale orange. This small butterfly (forewing 20-24mm) is very common in Trinidad and Tobago during the wet season, although in May I saw only a handful of specimens. Its origins are more exciting than the insect's colour scheme — the species hails from South America. The existence of birds like the blue-crowned motmot (or 'king-of-the-woods') and rufous-tailed jacamar, as well as insects, of South American descent is hardly surprising when you realise that Trinidad is only around 13 kilometres from the tip of Venezuela — no sweat for a flying organism. Even Tobago is a mere island hop away. This geographical location makes identifying species on Trinidad and Tobago difficult, because the West Indies as a faunal region includes neither Trinidad and Tobago, nor indeed the islands of Aruba, Curacao, Bonaire, and Margarita. Handbooks thus tend to ignore these islands, or at best to give them only cursory mention.

A small ray of hope exists in the form of P.D. Stiling's *Butterflies and other insects of the Eastern Caribbean*, readily available at hotel souvenir shops. This slim volume covers, in a general fashion, insects from damselflies and true bugs to wasps and butterflies. There are also notes

on a few spiders, millipedes, centipedes and scorpions. While the text is useful, most of the illustrations make one wince. This is not because of poor printing, but of the approach: almost without exception the insects figured have been stunned or strangled and then spreadeagled on leaves. You can imagine what a praying mantis looks like propped up on its elbows! Worse still, some of the specimens, including the magnificent yellow Orange-barred sulphur (*Phoebis philea*) figured on the cover are pinned. In case you've forgotten your bifocals, the pin is rendered clearly visible in the illustration of the Canna skipper (*Calpododes ethlius*) stuck onto a flower. A little more effort ought to have been put in the pictorial side of this booklet and I trust that its horrible, and demeaning, illustrations will be replaced in subsequent editions.

Two locations I discovered by the simple expedient of driving up every road in sight, later became firm favourites. The first was Arnos Vale Trace, a dirt road winding up into hills partially clothed in scrub among which cattle grazed on long chains accompanied by the inevitable cattle egrets. To reach these idyllic pastures, over which a tremendous variety of birds twittered, cackled and coo-ed, one had to drive past a hotel which our own staff averred was owned by the Mafia, or at least Italians, after which one would park under a huge tree and spend two or three hours filming, sound-recording, or just wandering around. The second location was the Hillsborough dam, in the exact centre of the island, past which a cart track wound heading for some rough country, part scrub part plantation. The hills were very steep and I ended up in a stream bed from which the jeep — fitted as it was with larger tyres on the back — refused to budge. Any attempt at using 4-wheel drive brought an immediate reaction from the vehicle, causing it to buck like a bronco. It was some time before I managed to cosset the jeep out of the stream bed and back onto a road running through stunted tropical rain forest.

Cicadas were made conspicuous on Tobago by their very absence. This could be due to the salty atmosphere, although in Sri Lanka these insects stridulate from coconut palm trunks right on the seashore. But at Hillsborough there was what at first I took to be the screech of rusty machinery, a weird keening sound rising and falling on the wind. Whether this was caused by cicadas or not or I do not know, but I eventually convinced myself that an insect of some kind was indeed involved and duly recorded the unusual sound.

Arnos Vale Trace produced an interesting batch of butterflies, not all of which I have been able to identify. One familiar looking beast was a beautifully marked "grizzled skipper" that turned out to be, however, a Tropical chequered skipper (*Pyrgus oileus*). I feel the name is a bit of a misnomer, as the insect more closely resembles the Grizzled skipper; it has a lovely marbled appearance and is a bit bigger (13-16mm). Its wings

are overlaid with long "hair scales" which are white in the male, brown in the female. There are two subspecies, separated by what Riley calls a "trivial" character: in *P.o.oileus* there is a dark brown 2mm long spot on the middle of the costa on the hindwing underside. This is lacking in *P.o.orcus*, which is essentially South American but extends into the Lesser Antilles as far as Dominica (16°N); the spot is absent in my Arnos Vale Trace specimens.

My earlier comment about Brimstones and Orange-tips is rather apt in the case of butterflies of the *Phoebis* and *Aphrissa* genera. In Riley and Hargreaves's stunning paintings in the book specific differences show up well, but with the amount of variation so characteristic of island chains in hot climates, you would need a lot of practice to be able to put a name to a specimen without benefit of a reference collection. At length I tracked down the name of an Arnos Vale Trace species, however. This is the Cloudless sulphur (*Phoebis sennae*), one of the species with lemon yellow males. With the ground colour in the female reputedly varying from yellow to orange, cream and even pinkish, I had to base my decision on the equality in size of two pearly spots at the end of the cell on the underside!

Lantana, a pantropical shrub attractive to butterflies, grew wild on the hilltops around Hillsborough and I soon spotted some small black swallowtails diving at tremendous speed through the gaps between the bushes. There are quite a lot of black swallowtails in the West Indies, but the Polydamas swallowtail (*Battus polydamas*) can be distinguished from the rest firstly by the lack of "tails", and secondly by a row of yellow postdiscal spots on the forewing and green ones on the hindwing. Underneath, the hindwing bears a double-crescent row of narrow red markings. Just visible are some thin yellowish crescents at the edge of the hindwing, between the veins. The butterfly ranges from the southern part of the United States to Argentina. There are an enormous number of subspecies, as each island appears to support its own "race". Riley makes no mention of a Tobagoan subspecies (you may recollect the island lies outside the West Indian faunal region), but refers to a *B.p.grenadensis* on the island of Grenada, just 150km to the north-west.

Incidentally, some confusion may arise when dealing with insects of the West Indies. This is because the area is divided by geographers into two main island groups, the Greater and Lesser Antilles. Around half of the latter belong to what in the days of sail were dubbed the Leeward Islands, the others constituting the Windward Islands. To make matters worse, a lot of authors (and holidaymakers) talk about "the Caribbean" when they mean the West Indies.

Well, West Indies or whatever, there can be few places in the world today where someone else's young and extremely attractive wife could

walk up to one and propose, in all innocence, "I nid de money and I'se sure youse c'd use an assistant, so why don' we jus' get together?" (Author's note: paraphrased; in its original form, you'd need chopsticks to sort it out.)

It all started when two Finnish TV sports reporters who'd joined us, brothers Tuomo and Jyrki Kaminen, arranged for a beach barbecue. In the Tobago dialect "beach barbequ" means forking out for grilled chicken wings, corn bread and an abundance of Old Oak white rum, and then, come de dark, planting oneself down on a damp beach amid the sand flies and smoky flames from beer bottles choked with paraffin rags and in imminent danger of blowing up. Rolling on to the sand, the Caribbean at one's back dutifully provides the proper West Indian atmosphere. More to the point, the organiser's uninvited relatives squatting in the darkness beyond the flickering flames demonstrate the ancient art of de-rumming bottles and de-fooding plates at a rate rarely equalled by people acclimatised to low temperatures and tea at the vicarage.

We had just reached the point at which we whities had realised the grub and hooch had entered a recession, when Sinette popped her question. "What about your husband — Rodney?" I asked. Rodney had biceps like coconuts complete with husks, as well as a nasty habit of crushing your hand when he greeted you that was going to bring him a visectomy if he tried it on me once again. She shrugged. "I w'u'n't do it, if de family di'n't nid de money," she said simply.

Giving vent to a blast of that Old Oak rum, I gazed benignly out into the blackness over the moonshot waters of the Caribbean. There seemed to be at least three moons. "Okay," I said grandly. And so it came to pass that in middle age I realised a life-long ambition — I acquired a sultry slave.

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(To be continued. . .)



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Following on from the success of the recent publication of *Larger Moths of the London Area* the London Natural History Society now proposes to work towards publication of a checklist of the microlepidoptera of Middlesex. It is expected that this exercise may take about five years to complete.

The term Middlesex involves the entire of Vice-county 21 and thus includes all the London boroughs north of the River Thames with the exception of the five lying east of the River Lea; these five are in South Essex. Middlesex also incorporates some areas which lie in the current administrative county of Hertfordshire, notably the Potters Bar area. Records are actively sought from appropriate persons for all those families generally regarded as “micros” – thus including the Psychidae which were formerly referred to as “macros”, as well as those which are sometimes referred to as “mesolepidoptera” (Tortricidae, Alucitidae, Pyralidae and Pterophoridae).

Records should include the species name, the Bradley and Fletcher Code number (to avoid nomenclatural confusion), the date where possible and the locality. Records will be assumed to relate to imagines unless “mine”, “larva” or other qualifying statements are given alongside. Localities will ideally involve a place name and a four figure grid reference. Place names should be those appearing on the Ordnance Survey maps; precise localities, such as the names of nature areas or ecology parks in London areas are desirable, but if these do not appear on OS maps the nearest locality should always be given. Where a grid reference cannot be obtained, a precise address as it appears in one of the various published books of street maps of London should be used. Site lists will ideally be presented in Log Book order to facilitate data entry. Overnight trap dates should be given according to the example 23/24 August or 23 August, and not as 24 August. Approximate counts and sexes are desirable for immigrants. Confidentiality of selected records may be requested. Records are required from all time, not just the present period.

Records should be addressed to The London Natural History Society's Lepidoptera recorder, Colin W. Plant, at The Visitor Centre, East Ham Local Nature Reserve, Norman Road, London E6 4HN who will happily provide more detailed information. All communications will be acknowledged and records from outside Middlesex contained in mixed lists will always be forwarded to appropriate Recorders unless directions are given to the contrary.

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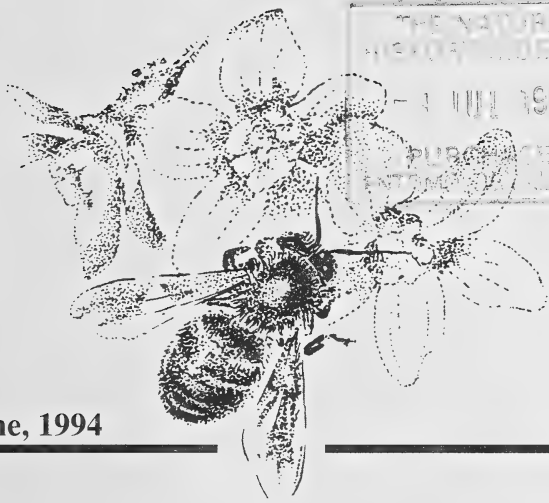
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WAYNE JARVIS B.Sc.

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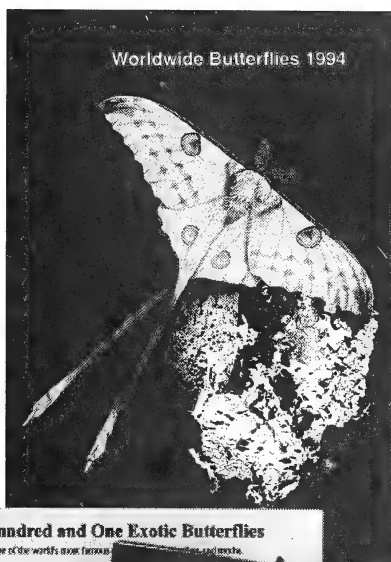
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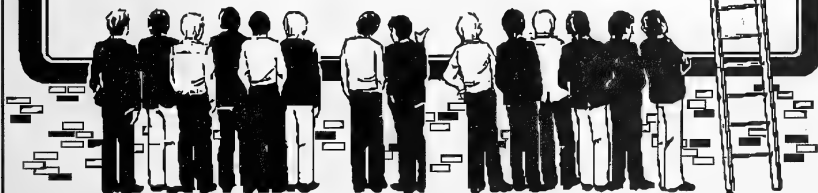
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AES BULLETIN

No. 394



EDITORIAL

When I read Brian's editorial last June: "Wanted – An Editor", I never imagined that I would be his successor. I suppose editing your first journal is bound to be a nervy time, but to follow in the footsteps of such a successful editor as Brian, leaves me wobbling at the knees. I would like to thank him personally for all his help during our transition period – I very much appreciate it. On behalf of the Society, I extend our sincere gratitude for all of his work on the *Bulletin* over the past twenty years. It is without doubt that he has played a major part in the Society's success. I am sure that in his new rôle as President he will continue to be a major influence. (He may like to submit an article or two!) We all thank him whole-heartedly for the work he has done and wish him continued success and enjoyment in his editing days with the *Entomologist*.

I am a twenty-two year old who graduated from the University of East London, having gained a degree in Applied Ecology last summer. I am currently working at Rothamsted Experimental Station as an entomologist. I am involved in a research project on insecticide resistance by whitefly. My main entomological interests are Lepidopteran Conservation, Hymenoptera, particularly ants and bees, and anything which can be reared with comparative ease! Outside of entomology, I am actively involved in refereeing football matches (contributors please note I only rarely use the red card!) and enjoy photography, although I must admit I'm no David Bailey!

Enough of me! As editor, I hope that I can continue to maintain the current balance of articles. I would like to make the Junior Section a regular occurrence, although this relies upon contributions (not necessarily only from junior members!). Also I would like to change the cover of the *Bulletin*. Over the past twelve months many members have suggested this and, although nothing has been decided, it is a possibility. Before any decision is made, it would help if members put forward their suggestions and ideas on this, and for that matter, any other aspect of the *Bulletin*.

It is also hoped that the recently re-named *Invertebrate Conservation News* (ICN) will be revived in the *Bulletin* in the new future.

Articles continue to arrive steadily at my desk (this is good news as I haven't got to fill in space with my own efforts!) but we continue to receive articles which are difficult to edit. Despite many attempts by Brian, some members still have to conform. This is how we like to receive articles: Please submit your work double spaced, either typed or hand-written, it does not matter, with wide margins. Only capitalise the title and do not underline anything! This makes my job easier, saves the Society paying to re-type your article and does not delay its publication.

Anyway, keep those articles coming in and here goes issue one!!

Wayne Jarvis

COMMON DOR BEETLE

by Jan Koryszko (6089)

I was most interested in Matthew Hogg's article (Vol. 52: 152) *Field trip in France*. The dor beetle (*Geotrupes stercorarius*) is also common throughout the British Isles. On the 19th August 1993 I found several specimens at Barlaston Rough Close Common, Staffordshire. Mr Geoff Halfpenny, keeper of Natural History at the City Museum and Art Gallery, Hanley, Stoke-on-Trent, removed 128 mites from one specimen. 93 mites belonged to the genus *Macrocheles*, whilst the remaining 35 belonged to the genus *Parasitus*. These two genera are commonly recorded on beetles and appear to use the insect primarily as a means of transport. The adults may feed on scraps of food which adhere to the beetle's mouthparts. The museum have retained the mites in its collection.

The beetle itself which flies on warm still evenings in summer and autumn, prefers to feed on horse dung, which is in plentiful supply at Rough Close. The beetle was recorded on several occasions during August and September. I also observed a specimen on Brown End Geological Nature Reserve on 13th September.

I would like to thank Mr Geoff Halfpenny for identification and information of the species concerned.

Professor J.E. Cooper and his wife Margaret Cooper have been evacuated from Rwanda but hope to return to Africa soon. In the meantime they can be contacted in Britain:

c/o Durrell Institute of Conservation and Ecology
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DE FUS' TIME IN TOBAGO

by Leigh Plester (2968)

Ylä-Muuratjärvi, 41800 Korpilahti, Finland.

(Continued from page 96)

The Grafton Beach Resort in reality was a spacious hotel on three storeys, the doors to the rooms, in true tropical fashion, lining a roofed over terrace/corridor on to which rain would occasionally spatter during a West Indian squall. My own room was at the far end of the second storey, near the subtly perfumed sewage treatment unit, while my balcony looked out on a lawn. Beyond this the land dropped sharply down to the Caribbean beach. In the centre of the lawn there was a tiny ornamental pond and bridge down to which, when the floodlights were turned on, small frogs hopped and began to pipe in a high octave that was a wonder to listen to for the few minutes wedged between sundown and the start up of the evening's steel band. Although the bands were a superb, and inseparable component, of that part of the West Indies, producing a wealth of melodies from popular tunes to classical music with a vigour that turned talk in the open-sided restaurant into an exercise in lip reading, I would have liked an hour on my balcony with just the frogs, a cold Carib beer, and the constant swish of the Caribbean to help me wind down at the end of a long hot day.

Leatherback turtles (*Dermochelys coriacea*) weighing up to 500 kilos come up onto the beach in front of the Grafton in April and May at night to scrape hollows in the sand in which to lay their eggs. These creatures are protected by law. At the Turtle Beach Hotel just down the road, a guard makes sure that tourists keep off the sand at such times. The Grafton, however, seems to encourage tourists to photograph the female turtles as they heave up on to the sand, and while we were there an idiotic bunch of Swedish tourists ended up between the sea and a turtle, thereby causing the latter (an *endangered* species) considerable alarm, since the celonian's natural instinct was to return to the ocean in which it would have to spend the next twelve months paddling around.

Nick, who has more of a circus approach to animals than I, spent several nights trying to see these turtles, and was eventually rewarded by having one come up around midnight, whereupon he dashed down to the second floor and woke his children, so that they could see it too. He had strict orders not to wake me for, although I had no objection to carrying a half-ton turtle back home in my baggage on British West Indian Airways, I didn't fancy trying to stick a pin through the thing once I got it there.

Besides which, most of the things I was interested in tended to be around in the morning, particularly if one rose before the engineer (a Scot) turned off the lights in the grounds. If you've read my account of Borneo, you'll

remember that insect names in the tropics are sometimes rather outlandish. On the other hand, if you're into British moths, you must agree that "Elephant hawk" is a pretty weird name for a pink insect. With colonialism, slavery and all that, small wonder that the West Indian "bessbug" turns out to be a beetle. It's a beetle, moreover, that ought to be issued to the army in place of those squeaky boots, for few infantrymen could equal the bulled shine on its elytra. Moreover, the creases (striae) along the latter are far better than you'll ever see in khaki drill.

The insect drops a few notches in the observer's estimation, however, by generally been found lying on its back under a lamp, the epitome of disorderly conduct. In the Caribbean when the sun starts to climb this can have lethal consequences. I was able to collect several desiccated corpses of this beetle, which attains around 30mm and - well, to cast around a bit for analogies - has a figure like an enlarged lesser stag beetle. Curled up near it, or in rainy weather investigating a wall, head turning slowly from one side to the other as though it had just discovered the wide world, you would usually find a millipede. These beasts would be large enough to cause comment in Central Europe, having a body length of around 80mm, but they brought curled lips from Nick and myself, who had 150mm long specimens from Malaysia in our show cases.

Oddments turned up under the lamps at the Grafton but they were never enough to make "lamping" an exiting occupation. I did pick up an impressive matt black weevil all of 50mm from rear end to tip of rostrum, on 8th May, as well as some colourful little Footman moths.

The only specimen of real merit was one I spied in the few minutes before dawn on the same day, mistakenly thinking I was watching a frog hopping about in the rapidly diminishing glow of the spotlight near the ornamental bridge. It took me a minute or two to don my shorts, run down the terrace to the lower floor, and sprint out onto the lawn and it wasn't until I arrived at the bridge that I realised I only had a handkerchief to deal with the specimen. This was a magnificent brown moth intricately marked like the litter on the floor of a tropical rainforest, its wing edges finely serrated. *Thysania agrippina*, which hails from South America, allegedly has the record wingspan of 15cm; my specimen measures just 8cm but is, for all that, an impressive moth cast in a similar mould to the giant *Thysania*. As I folded my handkerchief around my dawn prize I deeply regretted not knowing anything about its biology, or even what its larva looks like. How simple is the life of the collector, how frustrated that of the field entomologist.

Once the sun was up, I would repair to breakfast in the restaurant overlooking a sea calm after the cool night and providing an azure backdrop inviting imprintation with small flocks of flying brown pelicans who would dip and rise in an undulating, follow-my-leader fashion. The brown pelican (*Pelicanus occidentalis*) is the only species to actually dive into the water to catch its fish, so that from time to time one would detach itself from the

leader and plummet into the sea to fill its pouch. Many of these birds headed for open boats like the "In God we Trust" owned by local fishermen, where they would land with a great deal of wing flapping and bow rocking, to preen their feathers and add to the sanctity of the craft by turning it white with their excrement.

Meanwhile, with the entire crew of Videots now on site and open to friction, Mac would sit, arms folded, facing out to sea, distinctly dischuffed, his face a pale prune, his second cameraman Finn Aulis Koskinen head down in embarrassment over his breakfast, and Nick's Bisto kids doing their best not to splutter into their pineapple juice. In place of the evening's steel band, a flock of Tobago's national bird, locally known as the cocrico but officially termed the rufous-vented chachalaca, in the secondary growth above the hotel would be nearing the end of its dawn chorus - a series of loud guttural squawks guaranteed to put you off birds for life, at least with their feathers on and no gravy.

"I detect," I would say drily, my 16-mill independence much in evidence, "a rift in the video crew this morning!" As Nick looked up to comment, "Uriah Heap", the Grafton's *ante meridiem* Head Waiter, resplendent in dark trousers and white shirt, would materialise at my elbow, his *sotto voce* "May I suggest fish for breakfast, sir" causing a lurch in my stomach, lined as it was with the precipitated residue of last night's Old Oak Rum. And as I, hand over mouth, lurched in my turn to the soothing environs of the tropical fruit and cereal table, I might be lucky enough to spy an Orion (*Historis orion* = *H. odius*) winging its way over the hotel grounds as an antidote to the history of last night's drinking bout becoming messily public.

I first became acquainted with *Historis orion* during the 1960s, when Ronald Baxter began to supply dried South American specimens of the species. The butterfly's forewing measures up to 65mm in the female and has a lovely falcate, or hook, tip. About half of this wing is black, the remainder being a rich ochreous brown in a shape not unlike that of a broad ostrich plume. The hindwings, which have the same form as those of some tail-less Swallowtails, are dark brown with pale edges. By contrast, underneath the insect resembles tree bark and I was lucky enough, on the second trip in December, to be able to watch one settle under a thick tree branch in Arnos Vale Trace and blend in perfectly with its surroundings. Unimpressed by the butterfly's sneaky attempt at passing itself off as a piece of wood, I most unsportingly unfurled a large black kite net and demonstrated the fact, I must agree, that I'm not the kind of person you'd want in your glasshouse.

Like many of us I suppose, I often wondered in my youth what it would be like to actually see large insects like this one flying. Of course, a vast number of butterfly houses have sprung up since then (there is even one in Finland – under cover, of course), with the result that many European members must

have experienced the joy of watching exotic insects behaving as they do in the wild. The chief impression that has remained with me, with seven visits to the tropics now under my belt, is that when alive and in a hot climate large butterflies don't hang around spellbound by your white face – they put a hundred metres behind them before you can say “Robinson Crusoe”. The stately Orion was no exception, the few I saw flying being faster than a hands-up after a “Who's next?” in a pub with free beer.

Having nothing to quarrel about in my province, the video wallahs were always on speaking terms with me, so that each evening I was regaled by an account of what they had recorded – albeit frequently with the thinly-veiled innuendo that they were much better nature photographers than me. They would sometimes try to prove this by permitting me to gaze into one of their video contraptions in which – wonder of wonders – the day's recording could be viewed in black and white like an old fashioned telly. Once the crew filmed with such zeal that they put two day's events on one tape, with the result that the first day's events are now just a dim memory. The best thing they ever did was a video of a goat race – presumably recorded by shooting perpendicularly into a mirror.

Nick related one evening how Mac had discovered a giant snail in the “jungle” (= rain forest) around a disused sugar mill. Whatever his faults, Mac is a superb director and cameraman and so he naturally roped in this unpaid exotic beast for the start, and end, of a shot showing Nick jungle-bashing with taxi-driver/naturalist Cecil Lyons. “Waggons ho!” shouted Mac (or whatever these video wallahs bawl when they press the plastic button). Thoroughly alarmed, the giant snail threw up its foot and disappeared into a bush. Mac fished it out and tried again. By now the mollusc had the route taped; this time it went out of frame even faster. Mac gave it the full benefit of his “you bee-well should!” approach to actors/actresses/hermaphrodites. I saw the final shot. It's superb, although (according to Nick) completed an instant before the snail had another bash at the world greasy pole record. However, these amateur naturalists were happily able to realise a basic biological truth: snails froth, wildlife cameramen merely foam at the mouth.

Not all of their anecdotes caused me to clutch my belly and roll on the day's flutterby catch laid out on the bed. One day Nick came in and told me they had been filming some filthy great caterpillars on the Grafton Estate. The latter was once owned by Eleanor Alefounder who was so shocked by the havoc wrought by Hurricane Flora in 1963 – 80% of Tobagoan farms ruined, much of the island's bird life lost – that she set up a trust to help feed the birds. Nowadays, if you visit the Estate – a mere stone's throw up from the Grafton Beach Resort – you are likely to come across bevvies of American tourists with their hands in the air, all facing in the same direction. The hands hold slices of mango, banana or pineapple. This is in homage to neither Billy

Graham nor Hari Krishna – the fruit is designed to attract blue-crowned mot-mots. I never actually saw a bird descend as far as a proffered hand, although I had to keep my knees pressed together to avoid irrigating my shorts as I watched the weird supplicants.

Unnoticed by the devout, and hardly likely to be attracted by a palmful of pineapple anyway, the giant caterpillars had been spotted by Nick or Mac, I forget which, not far from the *estancia*. Nick gave me a detailed description, including a reference to the fact that these behemoths had eaten all the leaves off their bush. “Ah, yes, I know the species,” I said patronisingly, unimpressed, “it develops into an adult with ten pairs of wings and all the colours of the rainbow. We bug specialists call it the Common Moron!” He looked hurt, so I took the road up and nosed around looking for a bush doing a striptease. And sure enough there it was, a frangipani in its birthday suit, not a leaf left hanging on it.

The remaining larvae were eight to eleven centimetres long and about a centimetre wide. They were jet black, with bright yellow rings between the segments, seven of the rings being complete and three broken into sections. A plate behind the head together with the true feet and claspers were orange, speckled with black, the head being red and similarly adorned with black spotting. On each tail there was a long, very thin, whip-like “horn” about two centimetres long. With no food left and no other frangipani bushes on the estate, there was no way I could save the caterpillars and so I left them where they were. They seemed rather large, but when we arrived in Grenada in December we discovered a lot of similar larvae on frangipani bushes, mainly fringing the fine gardens around houses occupied by the American “liberators”. These December caterpillars were huge – measuring up to fifteen centimetres in length – and I was able to feed some up and take the pupae back to Finland. A gigantic larva, probably a female, was borne back in a tin of frangipani leaves but this unfortunately succumbed, most likely due to the change in indoor temperature or excessive dryness. Most of the pupae also dried up, just one producing a drab grey hawkmoth that I understand is *Agrius cingulata*. Frangipani is distributed throughout most of the tropics, so if you get a chance, have a go at rearing these mammoth caterpillars – they really are most spectacular. But note the warning signs on the defoliators – frangipani is poisonous.

(to be continued)

MOTH-A-THON

The Surrey Wildlife Trust has organised a number of events between the 14th and 23rd July. Further details may be obtained from Dominic Couzens on 081-876 3548.

HUNTING MARSH FRITILLARIES - THE LAZY WAY

by Michael Salter (19863)

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If one were to correlate the rarity, or otherwise, of a species by the frequency it was to appear on the dealers' lists, one would be forgiven for thinking that *Eurodryas aurinia*, the Marsh fritillary (Plate SS, Fig. 1), was a common species; in fact over most of its European range it is now endangered. The very characteristic that makes this species so apt for captive rearing, its fecundity, while offering an excellent protection against predators, is ineffective against the greatest contemporary threat, loss of habitat. Over the past few decades the damp meadows with devil's bit scabious, the typical habitat of *E. aurinia*, have been decimated.

In these islands some measure of the decline can be seen in the number of 10km grid squares the species is reported from. In the 1940s, of the c.3,600 such squares the Marsh fritillary was reported as seen in c.900 while by the 1980s this was reduced to just over 400 and the correlators of these records indicate that this, especially as regard to England, is an overstatement as many such records refer to sightings of single vagrant specimens away from colonies, or artificially-maintained colonies and introductions.

Comparision of distribution maps also demonstrate the westward retreat of this species. In England it is now effectively confined to the south-west and Lake District, similarly in Scotland the once widespread pattern has been replaced by a limited distribution in the south-west Highlands and Islands. In Ireland and Wales at first sight the species appears to be holding its own with little drop in the number of 10km squares occupied, but this belies the real picture; while the number of colonies might be reasonably stable the actual size of the individual colonies is much smaller. I doubt that we will ever again see such massive populations that the larvae become a pest as was reported in both Fermanagh and Clare in the last century.

In the early 1980s quite by chance I came upon three previously unrecorded colonies of Marsh fritillary quite near my home. I decided to consciously search for further sites and commenced this task in 1990.

One of the last things I noted about my three new sites was that they were all very similar habitats; road-side verges across cutaway bog. For those unfamiliar with the landscape of the Irish Midlands an explanation is called for. Roads were originally laid across bogs on a sort of floating causeway, ancient examples of such, as old as 3000 years, are occasionally uncovered and I believe the Liverpool and Manchester railway was similarly constructed over Chat Moss. If the bog is then exploited for turf (peat) the road finally

ends up on a raised bank three to eight metres above the new ground level. The verges of the road and slope of the bank often have a profusion of flowers with gorse (in Ireland called furze or whins), heather and devils bit scabious dominating. It appeared probable that other such sites would support further colonies and it was worth concentrating on such.

The methodology adopted was to identify areas where such conditions might occur in the comfort of home by using maps and literature and then when the opportunity arose, that is when I would be in the district on other matters, to visit these sites and look for evidence of Marsh fritillaries. The essential tools for this are a soil map, to identify areas of peat, and a half inch road map that can show the "grid" pattern of roads found in bogs that have been commercially exploited.

I found the optimum time to find *E. aurinia* is at the end of August and early September just before the larvae hibernate; I have the impression that the Irish population has a life-cycle about two weeks later than those in Britain, so for UK specimens this might be mid-August. At this time, not only are the scabious in bloom and thus acting as a conspicuous "flag" to the food-plant but the larvae are in webs on the leaves and easily seen. Another advantage of looking for larval webs is that it is an "all weather, all day" activity whereas finding imagines is confined to three hours each side of midday and then only in good weather!

The outcome became a family joke, "Dad's little exploration", when autumnal journeys would be interrupted by detours off the main road along bumpy bog roads and stops at any areas of scabious encountered. As far as finding new Marsh fritillary colonies were concerned I found that a 10-15 minute search of likely sites had a better than 50% chance of success and a score of new colonies have thus been mapped in four years.

Of particular note was a journey to Shannon airport in south County Clare. This is a trip frequently undertaken as my mother often flies to her sister in the West Indies using the Aeroflot flights through Shannon. While waiting for the flight in September 1991 I had a look at some promising sites just west of Ennis and encountered a river-side area of some several hectares of scabious with what must have been hundreds of webs. From my reading of reports this was the very area where "plagues" of larvae were reported in the last century.

Several pilgrimages to Knock proved very rewarding. This Marian shrine, visited by up to a million pilgrims per year, lies on the western side of an area variously referred to by local writers as "the black triangle" or the "snipe-grass country" because of the difficulty of farming its heavy wet soil. Geologically the region is a basin of heavy boulder clay overlaid by a mosaic of low sand ridges and shallow lakes and bogs some 1200 sq. kms. in extent: frustration for farmers but paradise for *E. aurinia*. I have found larvae in nine

of the ten 10km squares visited so far with what can only be described as "linear colonies", scabious-covered road verges stretching for many kilometres with webs dotted all along them.

In short, by concentrating on identifying the "road verge" colony of Marsh fritillary in Ireland, I have added some 15% to the total number of Irish colonies with a minimum of physical effort, merely by getting out of the car for a short saunter along the road; truly Marsh fritillary hunting the lazy way.

TISSUE MOTH IN STAFFORDSHIRE

by Jan Koryszko (6089)

On 19th August 1993, I visited Barlaston Rough Close Common. Whilst observing Gatekeepers (*Pyronia tithonus*) and a single Speckled wood (*Pararge aegeria*), I noticed something fly into a patch of heather. On beating the heather, I put up a Tissue moth (*Triphosa dubitata*). This is the first record of this species in the area. It has been common in some years at Heather Bloom, but it must have a foodplant other than buckthorn which does not grow in the locality. This is also the case for Barlaston Rough Close Common. The nearest locality where buckthorn grows in any quantity is Weston Spink, some miles away, and I have yet to see this species there. It is possible that it has been overlooked as the moth has been recorded in the past at the nearby Blythe Bridge Close by the late Edward Shaw.

A FURTHER PURPLE HAIRSTREAK BUTTERFLY AT BURNT WOOD, STAFFORDSHIRE

by Jan Koryszko (6089)

Since my last report Vol. 52: 143, a further Purple hairstreak (*Quercusia quercus*) was recorded by Derek Heath and myself when we visited Burnt Wood on 6th September 1993. After beating for some time we had only recorded a few Common marbled carpet moths (*Chloroclysta truncata*). Eventually we reached a clearing with a small pond, and as we did so, the sun emerged. Suddenly, a Purple hairstreak butterfly came down from the canopy and landed in a bush only a few feet away from us. The male butterfly then took off and fluttered around the pond before it finally returned to the canopy. We waited in the hope that it would return, but unfortunately it did not. I informed the county Lepidoptera recorder, who informed me that the area had recently been cleared around the pond and some scrub had been removed. He also told me that the Purple hairstreak had been recorded many years ago in this part of the woods, but not recently, thus making our find even more pleasing.

ABNORMAL (?) MATING BEHAVIOUR IN BUTTERFLIES INCLUDING TWO INSTANCES OF INTER-GENERIC COUPLING IN THE LYCAENIDAE (LEPIDOPTERA)

by W.J. Tennent (7756)

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A number of instances of what may be considered "odd" sexual behaviour in the Lepidoptera have been reported in the entomological literature in recent years. They range from male butterflies harassing males of the same species, through males showing interest in, or clearly attempting to mate with, females of a different species, to inter-specific and inter-familial pairings. Very occasionally there have even been reports of pairings or attempted pairings between moths and butterflies.

Prior to 1993, I had never observed a case of inter-generic pairing. However, during the last three years I have witnessed six instances when a male of one species of butterfly was seen seriously and persistently forcing his attentions on the female of a different species. For the record, these were as follows:-

19th April 1991 – Southern Yugoslavia

Male *Pieris napi* (Green-veined white) v. male *P. mannii* (Southern small white) Pieridae.

22nd April 1991 – South-east Greece

Male *Lycaena phlaeas* (Small copper) v. female *Heodes ottomanus* (Grecian copper) Lycaenidae.

27th June 1991 – Corsica

Male *Plebjus argus* (Silver-studded blue) v. female *Pseudophilotes baton* (Baton blue) Lycaenidae.

19th July 1991 – Arctic Sweden

Male *Vaciniina optilete* (Cranberry blue) v. male *Lycaeides idas* (Idas blue) Lycaenidae.

16th June 1992 – Western Algeria

Male *Melitaea didyma* (Spotted fritillary) v. female *Mellicta deione* (Provencal fritillary) Nymphalidae.

28th June 1993 – Southern Tunisia

Male *Syntarucus pirithous* (Lang's short-tailed blue) v. female *Zizeeria knysna* (African grass blue) Lycaenidae.

However, in 1993, two instances of inter-generic pairing were seen, one of which was photographed. The first occurred on the 6th June on the southern outskirts of Khenifra, Morocco when a pair of butterflies, clearly coupled, flew up from a bush of *Paliurus spinachristi* (Rhamnaceae). In the net they

immediately separated and I was surprised to see a male *Tarucus theophrastus* (Common tiger blue) and a female *Syntarucus pirithous* (Lang's short-tailed blue). *Tarucus* of both sexes were common in this spot, whilst *pirithous* was much less common. The reason for this strange coupling is a mystery, particularly so since the male *Tarucus* would presumably have had much less difficulty in locating a female of his own species, than in finding a female *pirithous*.

An even stranger inter-generic mating was seen on 17th July on the lower slopes of Djebel Lakraa in the western Rif mountains of Morocco. A coupled pair of Lycaenids were netted as they flew up from the path at my feet. On examination I found a fresh male *Polyommatus icarus* (Common blue) firmly coupled to a very worn female *Nordmannia esculi* (False ilex hairstreak). Hoping they would remain coupled, I took out a camera and released them; with the *esculi* hanging passively beneath, the *icarus* flew strongly for 30 metres or so before landing in the *Quercus* (oak) scrub. Unfortunately my auto-focus lens was playing up and, having fortuitously taken a single frame "just in case" (Plate SS Fig. 2) I was changing the lens to manual focus when the pair took off vertically, spiralled three or four metres up into the air and then dived obliquely into dense scrub some distance away where pursuit was impossible.

Polyommatus icarus was just emerging in small numbers at this time, with ± 20 males and no females seen during the day; both sexes of *esculi* were swarming in thousands as the species so often does in North Africa at this time of year.

Whilst researching another subject recently, I happened across a number of other recorded instances and began to note them. The sheer number (over 100 separate instances in total), suggests that inter-specific and inter-generic pairings are not as unusual as one might suppose; they may even be commonplace.

(Editor's note: An extensive list of references has been omitted due to shortage of space. any member who requires this list can obtain it by writing to me.)

THE TWO-TAILED PASHA AND THE CAMBERWELL BEAUTY IN SOUTHERN FRANCE

by Rev John Woolmer (7193)

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My previous experience with the Two-tailed pasha, *Charaxes jasius*, had been limited to a brief sighting on the banks of the River Gard just after a spirited discussion with a charming German anarchist on St Paul's views of slavery, a few fleeting glances in a coastal village on the then Yugoslavian island of Brac.

In August 1993, I enjoyed a two-week stay in the valley of the River Orb, north of Beziers. I quickly became aware of vast quantities of *Arbutus* shrubs with their strawberry-like berries beginning to ripen. Their excellent jam was on sale by the roadside. What chance of *C. jasius*? Were we too far from the coast?

At a small road junction, after a fruitless and hot morning with few Lepidopteral sightings, I saw a large chocolate-coloured butterfly dive onto a bush. Stopping the car, I enjoyed a leisurely first look at *C. jasius*. The next few days were frustrating. The Two-tailed pashas were present in reasonable numbers, especially on the roadside and on the stony banks of a small stream, but elusive and seemingly impossible to photograph.

Things improved when I found three large caterpillars – magnificent creatures with emerald-green, blue-spotted bodies, and great pink “horns”, which matched the stems of the foodplant (Plate TT Fig. 3). They were all basking in the sun, quite low down in the bushes, remarkably easy to see; the first took my breath away, I was only searching very casually and was amazed by the discovery.

Two pupated quickly and emerged in about a fortnight (Plate TT Fig. 4, Plate UU Fig. 5). The third did nothing for days, then charged around the small bush that I had cut, and pupated on the journey home.

An equally important discovery was an opened bottle of very ancient red wine left by the previous visitors! My mind raced back to stories of baiting African *Charaxes*. I added some ripe fruit and started to sprinkle the mixture by the roadside and on some bushes. The result was electrifying! From nowhere Two-tailed pashas started to appear. At one stage, no less than six were feeding from a small damp patch and at least another three couples were swooping around a small evergreen oak nearby. I had chosen a fortunate place; I realised later that the oak tree was a master tree and was actually used for resting (the heat was nearly 40°C in the shade!), courtship and feeding off honey dew.

The Two-tailed pasha is a wonderful sight, the great chocolate wings with their burnished bronze edges and long tails clearly visible as they glide past slowly, if alone, or rapidly if trying to pair. When feeding, their wings are invariably closed, the mottled pink and white underside with vivid blue spots, blending well into the stony scenery (Plate UU Fig. 6).

Before our very eyes, the females were soon laying bright yellow eggs on both sides of *Arbutus* leaves (Fig. 1). The eggs darken quickly before becoming transparent when the young larvae are ready to hatch. The eggs are very easy to see, and I assume that the laying season had only just begun as I didn't find many.

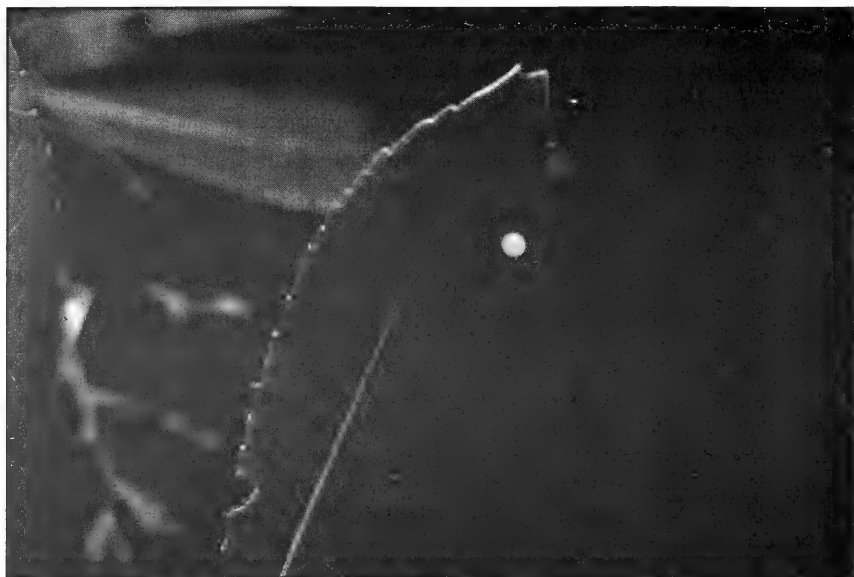


Fig. 1. *Charaxes jasius* ova on *Arbutus*.
Woolmer

For other butterflies, it was either too hot or too late in the year. The nearby mountains (up to 1000 metres) and surrounding country yielded fritillaries, of which the Queen of Spain was the most pleasing and the Silver-washed the most common, the bright orange-yellow Cleopatra, Clouded yellows, both common Swallowtails, many Graylings, and the Southern white admiral . . . but no Camberwell beauty. (*Nymphalis antiopa*)! Why is she so scarce? In ten European holidays I have had only one brief sighting by the roadside in the late afternoon in the mountains of Austria. Have other readers been more successful?

We returned home on a Saturday, and got stuck in a huge traffic jam on the N9. Fed up, I diverted through a gorge crowded with tourists and canoes, and was glad to escape onto a fast, but unpopulated main road across the southern part of the Massif Central. Doing a steady 60mph, I observed a fine field of large flowering thistles, and noticed a large dark butterfly feeding by the roadside – surely an *antiopa*! I ground the car to a halt, raced back along the road, called the family, and we observed *Nymphalis antiopa* for several minutes. It fed, showing its mourning cloak underside, then flew a little, and continued feeding with its glorious maroon and gold-edged forewings fully open. Even my children were impressed, and mentioned it for many days. I went for the camera, but the Le Morio flew back into the forest on the opposite side of the road, leaving the thistle field full of ubiquitous Graylings.

I have reared *antiopa* from larvae bought in England, and it always seemed quite small. My two brief genuine sightings gave the impression of a much larger and more impressive insect and have given me the greatest pleasure of all my Lepidopteral viewing.

TWO BILATERAL GYNANDROMORPHS IN ONE LIFETIME – ALMOST!

by John Tennent (7756)

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I well remember, on the 7th July 1975, in a disused quarry in Northern Ireland, seeing a curious butterfly in flight which sometimes seemed like a male Common blue (*Polyommatus icarus*) and at others looked like a female. When it alighted and sat with wings half opened, I could see part of the left side upperside and most of the right side underside but was puzzled because although the upperside was male, the underside appeared female. The realisation slowly dawned that I was looking at a fresh and perfect bilateral gynandromorph! (*Entomologist's Gaz.* 27: 123 (1976)).

Exactly 18 years and two weeks later, on the 21st July 1993, collecting in very dull weather in Granada province in southern Spain, I disturbed a Lycaenid butterfly which flew weakly and settled with wings closed on a grass stem. The distinctive flash of brown and blue instantly took me back 18 years and I was quite convinced I had found a second gynandromorph.

It turned out to be – again perfect and fresh – a mainly female Chapman's blue (*Agrodiaetus thersites*), if anything even more spectacular than my earlier find (Plate VV Figs. 7 & 8). It is actually a female, the left side normal and the right side almost completely “washed” with male blue coloration, giving the usually orange submarginal lunules a rather attractive “rosy” hue. The underside is quite normal female. There is a slight imbalance in size, the right side having a forewing length of 14mm and the left 14.5mm.

DOR BEETLES IN QUEEN ELIZABETH FOREST PARK

by John Hay (6878)

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Queen Elizabeth Forest Park, which straddles the boundary between the Highlands and Lowlands of Scotland, covers 20,000 hectares. It is located a short distance to the north of Glasgow (Sankey, 1990). This Forestry Commission Park has resplendent scenery and its boundaries contain a wide-ranging flora and fauna, including many insect species.

One group of insects found in the Park are the so-called "dor" beetles comprising the genus *Geotrupus*, which are classified according to Crowson (1967) as: Suborder, Polyphaga; Series, Scarabaeiformin; Superfamily, Scarabaeoidea; Family, Geotrupidae. The term "dor" is another rendering of drone. When flying, usually on warm evenings, the beetles emit a characteristic droning sound, as they seek either mate or freshly-laid dung, or if they are attracted to a source of light. Interestingly, the subterranean larvae also stridulate (Imms, 1973).

These beetles are fairly large (12 – 26mm in length), and dorsally are blue-black in colour, with bluish-violet iridescence ventrally. Differences in striae, which run from anterior to posterior on the elytra, are important features for distinguishing species.

Dor beetles characteristically burrow in the soil beneath dung, where the male delivers pieces of the dung to the female, who in turn produces a dung-ball into which her egg is deposited. Like earwigs (and some other insects), there appears to be fairly complex parental care of the eggs by these insects. In some instances at least, the female remains with the egg until the scarabaeiform (C-shaped) larva emerges, thus protecting the egg from predators.

There are six British species identified (Kloet & Hincks, 1945), all are mainly (or exclusively) associated with herbivore dung. An excellent and simple-to-use key (Skidmore, 1991) is available for the genus *Geotrupus* (as well as other insects which frequent dung).

All six species were identified in the Park over a four month period (May to August 1993). *G. stercorarius* (L. 1758), *G. spiniger* (Marsham, 1802) and *G. vernalis* (L. 1758) were most commonly noted. Adult males and females were identified, either alighting upon, or actively working the dung. Others were discovered upturned, struggling to regain their footing. Elytral remains were often detected within fox scats. These observations from Scotland, are in keeping with those of Murray (1853). Less obvious were *G. stercoratus* (Scriba, 1791) and *G. mutator* (Marsham, 1802). Only a single male *G. pyrenaicus* (Charpentier, 1825) was observed, the insect was dead, and its carcass was somewhat the worse for wear!

Burrows, the shape of which are characteristic for different types of dung beetle (Harde, 1984), were not excavated, for fear of disturbing larvae and/or "nesting" female insects.

In some locations, the dor beetles have associated with them the fairly ubiquitous, but somewhat smaller (4-6mm in length), *Aphodius porcus*. The latter dung beetle keyed according to Jessop (1986), may have been attempting to enter the dor beetle burrow in order to destroy the egg of *G. stercorarius* (or other species) and use the dung-ball for laying its own egg (Evans, 1975). Mites were not detected on any captured-released *G. stercorarius* (often referred to as the "Lousy Watchman"), or indeed any other species examined.

The biology of dor beetles represents a fascinating area of entomology and its study is to be recommended, especially those aspects concerned with their parasites (Crowson, 1981). A splendid place to begin the study of dung beetles is the Society's *A Coleopterist's Handbook*.

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LARGE COPPER EXTINCTION: WERE BIRDS TO BLAME?

by Brian Gardiner (225)

Watching a television programme about a well-known haunt of mine, Woodwalton Fen, I was appalled to see a reed bunting (*Emberiza schoeniclus*) feeding a Large copper butterfly (*Lycaena dispar batavus*) to its parasitic foster child, a cuckoo (*Cuculus canorus*). In view of the enormous effort put into breeding these coppers in order to sustain them on the fen, I wonder how many of them are "wasted" in this way and if indeed the final extinction of the species was not due to birds although it has been common to blame "collectors". That agricultural man was primarily responsible there can be no doubt. He should not have drained the fens. A few weeks later watching another nature programme, what did I see but a magnificent Morpho, minding its own business, enjoying the sunshine and taking a well deserved drink, be sneaked up on and gobbled up, wings and all, by a bird. Eat or be eaten but do not blame "collectors"?

**A NEW SUBSPECIES OF *PARNASSIUS CHARLTONIUS* (GRAY)
FROM KUNLUN MOUNTAINS, CHINA. (LEP: PARNASSIIDAE)**

by *Huang Hao*

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During the summer season 1993, I captured many high-altitude butterflies in south-west Tibet and west Kunlun Mountains. Among the butterflies, I found the new subspecies of *Parnassius charltonius* (Gray) from the Kunlun Mountains, described in this paper. The type specimen is preserved in my collection.

This fine species was first captured by the Englishman, Major Charlton near Lapsang. To date, 26 subspecies have been described, but most are little differentiated and do not merit being retained. 16 subspecies have been retained by Atsuo Ohya (1987).

Parnassius charltonius mazhaensis ssp. nov.

Holotype: male, length of forewing 34mm, wingspan 59mm. Mazha, in the west of Kunlun Mountains, Xinjiang. 3500m. 21st August 1993.

Only a male is known. It is close to ssp. *corporaali* (Bryk, 1935), but differs from it as well as, ssp. *deckerti* (Verity, 1907), ssp. *otto* (Bryk, 1932), ssp. *ella* (Bryk, 1932, ssp. *robertjan* (Eisner, 1959). This is distinguished by the following points. (Figure 1).

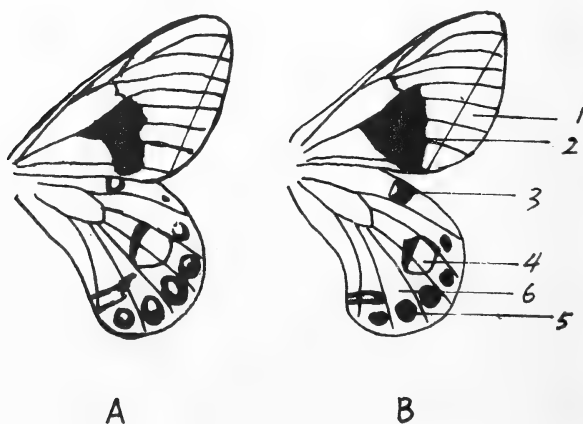


Fig. 1. A. ssp. *corporaali*, B. ssp. *mazhaensis*.
Huang Hao

Forewing:

1. Outer margin prominently rounded.
2. Median band more developed.

Hindwing:

3. Outer edge of ocellus 1 heavily blackened.
4. Ocellus 2 heavily marked with black on its inside edge as in the others, but smaller.
5. Submarginal spots smaller.
6. The marking between ocellus 2 and anal marking obsolete.

Remarks: By the forewing black median band more developed and the hindwing ocellus 2 heavily marked with black on its inside edge, this new subspecies can be distinguished from ssp. *charltonius*, ssp. *bryki*, ssp. *amabilis*, ssp. *eisnerianus*, ssp. *serinissimus*, ssp. *sakai*, ssp. *ducalis*, ssp. *flaugeri*, ssp. *anjuta*, ssp. *romanovi*, ssp. *vaporosus*, ssp. *wernickei*, ssp. *voighti*.

In Kunlun Mountains, this new subspecies has been seen flying with *Vanessa cardui* L. in valleys at about 3500m. The various subspecies of *P. charltonius* are found in the following geographical areas (Fig. 2)



Fig. 1. A. ssp. *corporaali*, B. ssp. *mazhaensis*.

Huang Hao

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A VISIT TO BROWN END QUARRY GEOLOGICAL NATURE RESERVE AND COOMBES VALLEY RSPB NATURE RESERVE, STAFFORDSHIRE

by Jan Koryszko (6089)

On 11th September 1993, Mr Derek Heath and myself, as guests of the Institute of Biology, visited Brown End Quarry Geological Nature Reserve. We were met by our guide, Mr John Drewitt from the Staffordshire Wildlife Trust, who gave us a most interesting talk on the local geology. Although the nature reserve is a geological site of specific scientific interest, it supports a variety of wildlife. There are over fifty species of flowering plants in the reserve, and it is said that the most notable feature of the reserve is its fine display of cowslips in late spring. A number of birds (including warblers) and butterflies have also been recorded.

The day was bright and sunny and we hoped to see many insect species on our visit. The first butterfly we came across was a Red admiral (*Vanessa atalanta*) closely followed by a number of Walls (*Lasiommata megera*) basking on the rocks. We saw a number of snails on the rocks, extracting calcium, in order to strengthen their shells, from the limestone. Particularly striking were the banded snails. We then noticed a dor beetle (*Geotrupes stercorarius*) fly past and crash land on a bank nearby. There were also a number of common green grasshoppers (*Omocestus viridulus*).

After lunch we visited Coombes Valley RSPB Nature Reserve, a woodland habitat of around 300 acres. We were met by Mr Maurice Waterhouse, the warden, who gave us a most interesting tour of the area. The reserve lies on both sides of a steep valley and is divided by a meandering stream. Little is known about the history of the valley prior to the middle of the last century, but due to the presence of certain insect species, parts of the wood must be at least 300 years old. Mr Waterhouse explained the problems that were faced in removing rhododendron and bracken to allow light to penetrate to the forest floor and the thick leaf litter formed by fronds which prevent seedlings from establishing themselves. Rare Lepidoptera have been recorded in the wood. The High brown fritillary (*Argynnis adippe*) is seen most years. Not far away at Caldonlow Quarries the Dark green fritillary (*Argynnis aglaja*) is also seen. In 1987 a colony of Small pearl-bordered fritillary butterflies (*Boloria selene*) was recorded by J. and W. Hill in Coombes Valley. This colony has been considered extinct several times, but it still exists at a low density. There is plenty of insect life in the area, with moths, beetles, dragonflies, including a few hawkers, and the more common butterflies expected in the area to be found.

I would like to thank the members of the Institute of Biology, Mr John Drewitt and Mr Maurice Waterhouse for making us welcome and for a most interesting and knowledgeable day out. Also many thanks to Mr C. Byatt for making the visits possible.

WEEVIL SQUEAKS – A PLEA FOR RECORDS ...

by *Tony King (9094)*

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Weevils may not strike the average naturalist as the most noisy of animals, and for good reason too. However, some species do most definitely squeak, for a variety of reasons, and can be heard by the human ear in some cases from several centimetres away, or further if in chorus. Other squeaks may only be picked up by electronic sound receiving equipment. Either way, those which do and those which don't, are of considerable interest to those of us who care. Although there is a considerable body of literature on the morphology of weevil sound-producing mechanisms (eg. Gahan 1900), dating back over a century. Unfortunately there are very few records of weevils being heard to squeak and very little on function (although see eg. Rudinsky & Michael 1972).

Within the Super-family Curculionoidea, squeaking species have been recorded from three families: Curculionidae, Scolytidae and Platypodidae. Sound is produced by stridulation; that is the rubbing of one part of the anatomy over another. Several different types of stridulatory organ are found in the Curculionoidea, especially within the Scolytidae (eg. Barr 1969). The most widespread however, is by use of an elytro-tergal organ. This generally consists of a file (*pars stridens*) internally on the apex of the elytra and a plectrum on the posterior abdominal tergites (dorsal surface of the segments). Sound is produced in this case by the rapid backward-forward movement of the abdomen resulting in the scraping of the plectrum across the elytral file (eg. Gibson 1967).

Most weevils that do possess a stridulatory organ can be induced to squeak by gentle manipulation between thumb and finger, although to be heard the weevil must normally be held fairly close to your ear. If you have heard weevils squeaking, or find in future that you can induce them to do so, please get in touch. Of particular interest would be records from the curculionid sub-families Cossoninae, Cryptorhynchinae or Molytinae. Also useful, but not vital, would be the sex of squeaking individuals, any anatomical movement observed during squeaking, and the circumstances in which they were heard to squeak.

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MORE INVERTEBRATE RECORDS FROM THE ISLE OF MAN

by James Wright (9351)

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Following the success of the previous surveys, carried out on the Isle of Man in 1990 and 1991 (Wright, 1992), another week long survey was carried out between 8th and 14th May 1993 (Wright, 1993). Though primarily concerned with spiders, some collecting was carried out concerning beetles, ants, centipedes, millipedes and woodlice. The latter groups were collected, as they were met with, whilst actually searching for spiders. A number of new county records were taken, as well as a number of more rare or local species, and these are noted here.

The Isle of Man continues to be a centre of attention for the author, regarding the island's spiders. The provisional list now stands at 193 species (there were 179 in 1992), which has also been added to by other workers in the field. Another survey is planned for some time in 1994, as this is written, which hopefully will take the number of species above the 200 mark (considered a milestone for an island the size of Mann).

A number of sites on the island continue to provide new and interesting records. Primarily these consist of the Curraghs, the Ayres, and Langness. Other places are rapidly proving to be most interesting from an invertebrate conservation viewpoint, namely, Port Cornaa, Scarlett Point, Billown Quarries, Snaefell, and several of the national glens. The Calf of Man, which has not been visited by the author as yet, also revealed several interesting invertebrates when last surveyed (Loxton & Walker 1989) and it is hoped to make a visit to this small islet on some future survey. The central curraghs also appear to be promising and, it is fair to say, Mann is not short of sites to tempt the entomologist.

Many cave habitats were visited on this most recent survey, to try and see how well distributed the cave spider, *Meta menardi*, was on the island. It turned out to be quite widespread. Unfortunately none of the other more subterranean species of spider were encountered, though this does not mean they do not exist there, and it is hoped they will eventually be revealed.

Apart from new county records for spiders, the only other target group that were added to were beetles. I now list the new county records below;

ARANEAE (Spiders)

DICTYNIDAE

Dictyna arundinacea (Linnaeus)

GNAPHOSIDAE

Zelotes apricorum (L. Koch)

CLUBIONIDAE

Clubiona lutescens (Westring)

Phrurolithus festus (C.L. Koch)

THERIDIIDAE

Theridion pallens (Blackwall)

NESTICIDAE

Nesticus cellulanus (Clerck)

LINYPHIIDAE

Agyneta ramosa (Jackson)

COLEOPTERA (Beetles)**CARABIDAE***Stenolophus mixtus* (Herbst)**CURCULIONIDAE***Phyllobius oblongus* (Linnaeus)**CHRYSOMELIDAE***Galerucella nymphaea* (Linnaeus)*G. pusilla* (Duftschmid)

Two of these spiders, *Z. apricorum* and *A. ramosa*, are not commonly met with, the latter being the rarer of the two. In the beetles, *G. nymphaea* and *P. oblongus* are mostly notable for different reasons. The former is more usually associated with southern England, whilst the latter is considered quite common in the UK. However, it belongs to a genus found to be relatively rare on Mann for some reason.

Other specimens, of spider, beetle, and woodlice, were considered of note but only the more unusual of these will be discussed here.

SPIDERS: the lycosid, *Arctosa leopardus* (Sundevall), and linyphiid, *Halorates reprobus* (O.P.-Cambridge), are not commonly met with, being quite local in their distribution and habitat preference.

BEETLES: the carabids, *Leistus fulvibarbis* (Dejean), *Patrobis assimilis* (Chaudoir), and *Bradychellus sharpi* (Joy), together with the curculionid, *Otiorhynchus arcticus* (Fabricius), are considered local and more southern in their distribution. The curculionids, *Barypeithes sulcifrons* (Boheman) and *Sitona lineelus* (Bonsdorff), are nationally notable species (Nb), and were taken from Langness.

ANTS: *Lasius alienus* (Foerster), which is on the northern edge of its distribution (but widespread on the island) and large numbers of *Formica fusca* (Linnaeus), were found on this survey. Both are more southern in their distribution. A microgyne queen *Myrmica ruginodis* (Nylander) was also taken.

WOODLICE: *Armadillidium vulgare* (Latrielle), which is considered rare in the north, is found to be widespread on Mann.

The curious feature of most of the above records is the amount of so called "southern species". This is met with time and time again on the Isle of Man. Yet, one of the most common beetle genera encountered in the UK – *Phyllobius* – has thus far revealed only two species (both taken by the author). This only serves to demonstrate the amount of scope for recording invertebrates on the Isle of Man and, hopefully, should show how rewarding collecting can be for the amateur naturalist.

I am most grateful to Manx Airlines Project 2000 and the Entomological Club, for financial assistance toward the above survey. Many people also gave me great help with identification and verification of species: Chris Felton and Peter Merrett (Spiders), Adrian Fowles and Martin Luff (Beetles), Simon Hoy (Ants), David Bilton (Woodlice), and Tony Barber (Centipedes and Millipedes). I am indebted to you all. I would also like to thank my wife and daughter, Mary and Wendy, for being so unselfish and allowing me to indulge myself with this project.

MICROLEPIDOPTERA OF MIDDLESEX – AN APPEAL FOR RECORDS

by Colin Plant (9240)

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Following on from the success of the recent publication of *Larger Moths of the London Area*, the London Natural History Society now proposes to work towards publication of a checklist of the microlepidoptera of Middlesex. It is expected that this exercise may take about five years to complete.

The term Middlesex involves the entire of Vice-county 21 and thus includes all the London boroughs north of the River Thames, with the exception of the five lying east of the River Lea; these five are in South Essex. Middlesex also incorporates some areas which lie in the current administrative county of Hertfordshire, notably the Potters Bar area. Records are actively sought from appropriate persons for all those families generally regarded as “micros” – thus including the Psychidae which were formerly referred to as “macros”, as well as those which are sometimes referred to as “mesolepidoptera” (Tortricidae, Alucitidae, Pyralidae and Pterophoridae).

Records should include the species name, the Bradley and Fletcher Code number (to avoid nomenclatural confusion), the date where possible and the locality. Records will be assumed to relate to imagines unless “mine”, “larva” or other qualifying statements are given alongside. Localities will ideally involve a place name and a four figure grid reference. Place names should be those appearing on the Ordnance Survey maps; precise localities, such as the names of nature areas or ecology parks in London areas are desirable, but if these do not appear on OS maps the nearest locality should always be given. Where a grid reference cannot be obtained, a precise address as it appears in one of the various published books of street maps of London should be used. Site lists will ideally be presented in Log Book order to facilitate data entry. Overnight trap dates should be given according to the example 23/24 August or 23 August, and not as 24 August. Approximate counts and sexes are desirable for immigrants. Confidentiality of selected records may be requested. Records are required from all time, not just the present period.

Records should be addressed to The London Natural History Society's Lepidoptera recorder, Colin W. Plant, at The Visitor Centre, East Ham Local Nature Reserve, Norman Road, London E6 4HN who will happily provide more detailed information. All communications will be acknowledged and records from outside Middlesex contained in mixed lists will always be forwarded to appropriate Recorders unless directions are given to the contrary.



Fig. 1. The Marsh fritillary, *Eurodryas aurinia*.



Fig. 2. An abnormal mating? A Common blue (*Polyommatus icarus*) and False ilex hairstreak (*Nordmannia esculi*) coupled together.



Fig 3. The larva of the Two-tailed pasha, *Charaxes jasius*.



Fig. 4. An emerging Two-tailed pasha, *Charaxes jasius*.

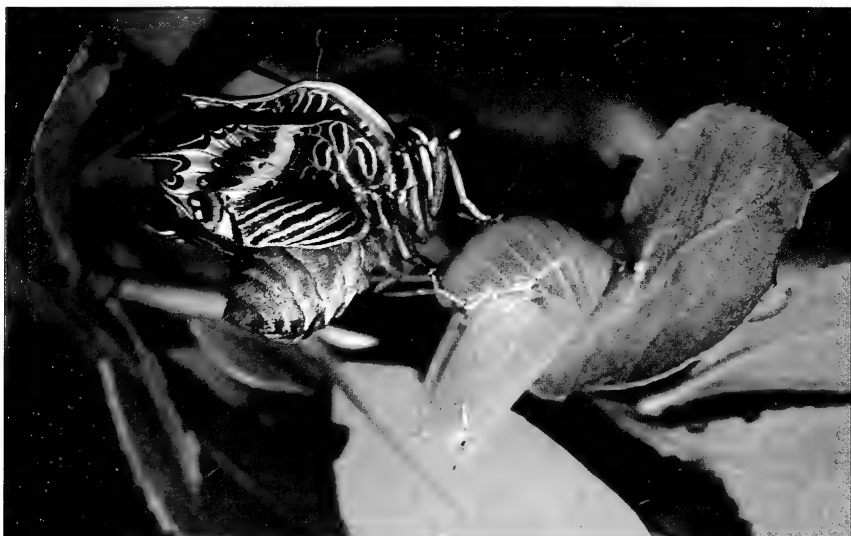


Fig. 5. The emerged Two-tailed pasha begins to pump up its wings.



Fig. 6. An adult *Charaxes jasius* feeds on a roadside in France.

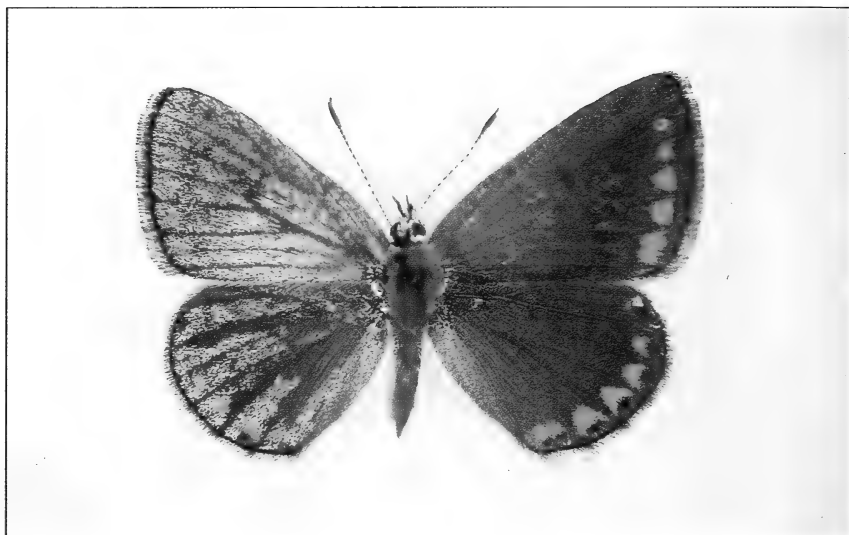


Fig. 7. Upperside of the gynandromorph of Chapman's blue, *Agrodiaetus thersites*.

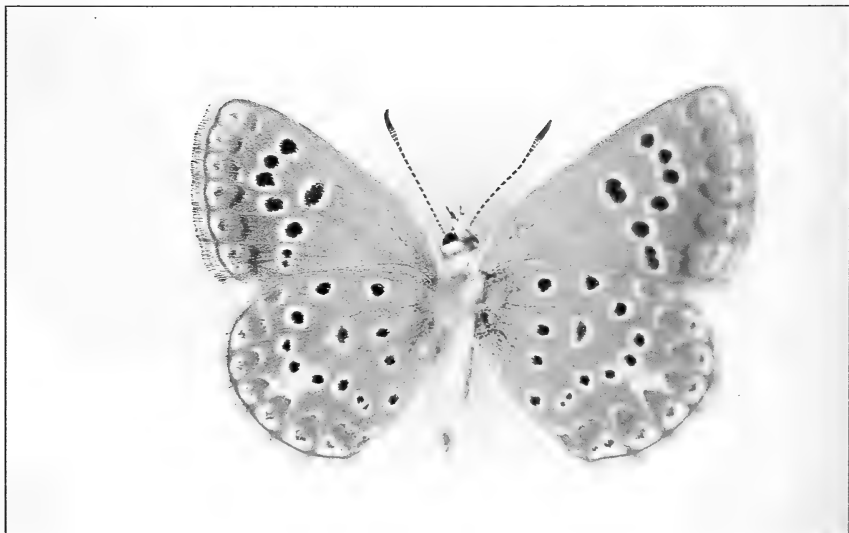


Fig. 8. Underside of the gynandromorph of Chapman's blue, *Agrodiaetus thersites*.

**BUTTERFLIES AND MOTHS OF SOUTH-EAST MAJORCA,
5th - 11th APRIL 1991**

Paul Waring (4220) and Rachel C. Thomas

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Like so many we flew to Majorca to leave behind the changeable weather of Britain for sun and warmth when we had the opportunity of a week's holiday, but, less usually perhaps, we chose to go in early April. A strong northerly wind in Majorca caused the plane to make three passes before landing successfully but the wind held with it the promise of migrant birds accumulating on the island awaiting more favourable conditions in which to proceed on their journey to northern Europe. On leaving Palma airport in our hire car we drove along roads lined with rampant bright yellow crown daisies *Chrysanthemum coronarium*. Stopping to buy groceries we noticed the grey multi-celled paper nest of the wasp *Polistes gallicus* and three individuals of this yellow and black species walking over the nest inspecting the compartments. The wasps proved to be common on the island and we found several more nests in the garden of the house where we were staying, at Santanyi, a village in the south-east of the island (39.20'N 3.5'E). Some of the wasps' nests were attached to plants, others to walls, near the ground and each on a thin grey pedicel. Also noticed on one of the crown daisy flowers was the red and black beetle *Mylabris polymorpha* the larvae of which, according to Chinery (1986), parasitises the eggs of grasshoppers. As we drove off the road and down an unsurfaced farm track to our holiday home we were greeted by the yellow-marked southern form of the Speckled wood *Pararge aegeria* which flitted up over the car and continued on its way along the hedgerow. A large black oil beetle *Meloe* sp. ambled across the driveway dragging its bloated abdomen and we saw two more of these beetles around the house during our stay. Banded snails were extremely abundant amongst roadside bushes, much more so than we have seen in Britain, and we also saw several larvae of carabid beetles feeding on them. One was collected and reared to adult. It produced an adult which most closely resembles *Carabus lucitanicus* (det. R. Key), a very common species amongst the British fauna, but it may be that it is a closely-related species not present in Britain.

During the week the Small white *Pieris rapae* was the commonest butterfly in the garden. Other butterfly species seen included a Red admiral *Vanessa atalanta*, several Small coppers *Lycaena phlaeas* and the Wall brown *Pararge megera* which was almost always in view. We also captured and brought back a single specimen of a small brown lycaenid butterfly with short tails on the hindwings. It was one of several that we saw flying around the flower borders of the garden. We were unable to find it in standard textbooks on European butterflies (eg Higgins and Riley, 1977) but it has since been identified as the Geranium bronze *Cacyreus marshallii*, a species of southern

Africa which appears to have been accidentally established in Europe. The presence of this species in the Balearics was recently reported in this journal by Grey (1993) who saw it on the south coast of Menorca in October 1991 but adds that it had already been seen on Majorca by this time. Published accounts date its arrival in Europe back to at least 1989 (Eitschberger and Stamer 1990, per Honey 1993) and Peter Cramp (pers. comm.) observed it in Majorca from his first visit of 1987. Now the butterfly is numerous in the Balearic Islands, of which Majorca is the largest. It has also been reported from the Spanish mainland and Belgium and back in 1978 in Britain on imported *Pelargonium* var. "Fever Cascade" at Cheshunt, Hertfordshire (Honey 1993). The larvae burrow into the stems and flower buds of the large red geraniums, that are so much a feature of Spanish gardens and verandas, and not only spoil the appearance of the plants but can be so severe as to kill the plant. The insect is now regarded as a threat to the Spanish geranium industry, which has been estimated worth £16 million per year. A poster and several articles in newspapers have been produced to raise awareness, encourage control and discourage importation of tenanted plants (Honey 1993 and pers. comm, and P. Cramp pers. comm.). So it seems this successful colonist is an unwelcome addition to the European list.

We were fortunate to have the use of a Robinson light trap and generator. This we operated in the garden for a couple of hours from dusk most nights (there was no mains electricity) and we also trapped further afield on one night. The garden consisted of an open lawn with the white form of the crown daisy *C.c. discolor*, various plantains, vetches, bindweeds (*Convolvulaceae*) and carline thistle *Carlina vulgaris* bordered by a selection of Mediterranean garden plants including introduced cacti and a lemon tree. The house was surrounded by groves of figs and almonds. Many of the herbaceous plants had reached the stages of flowering that we associate with June in Britain and some of the grasses were already setting seed. The north wind dropped after the first day and sunshine and dry weather prevailed. The nights were cold, clear and star-lit however.

The Shuttle-shaped dart *Agrotis puta* was by far the most abundant moth, with a dozen or more each night. Other species were represented by only one or two individuals per night. These included the Dark swordgrass *Agrotis ipsilon*, the White-speck *Mythimna unipuncta*, the White-point *M. albipuncta*, the L-album wainscot *M. l-album*, and the White pyrale *Plutella unionalis*, all of which are regular migrants to Britain. A singleton of a smaller wainscot *Mythimna scirpi* was added to the list. Also to the light trap was a single specimen of the Smoky spurge hawk-moth *Hyles dahliei*. Described by Geyer as a distinct species in 1827, but often treated as a race of the Spurge hawk-moth *Hyles euphorbiae*. Pittaway (1983, 1993) considers it a valid species based on breeding experiments and features of the early stages and this is

followed by D'Abrera (1986). The moth appears to be known only from the Balearic Islands and from Corsica and Sardinia. According to Parrack (1973) the species is fairly common on Majorca and often found as larvae in June and July "feeding on a variety of spurge, perhaps most typically in coastal areas on the sea spurge *Euphorbia paralias*." As illustrated in Pittaway (1993), the larva lacks the orange patches on the sides of the segments that are found in *H. euphorbiae*.

The fawn Annulet-like moth *Gnophos mucidarius* and the Yellow belle *Aspitates ochrearia* were seen in the garden during the day as well as at the light trap and the geometrid *Horisme scorteara* and the grey pyrale *Mecyna asinalis* were also recorded. A single Large yellow underwing *Noctua pronuba* put in an appearance at the trap and a single fawn geometrid, heavily marked with black, *Menophra japygiaria* was noted. According to Culot (1917) the larva of this species feeds on the leaves of olive trees *Olea europaea*.

Our visit to Majorca was not primarily entomological but we did have the opportunity to operate the light trap on 10th April near the light-house at Cabo de Salines on the southern-most tip of the island. This area consisted of coastal aleppo pine woods extending to a limestone seashore scattered with wind-blasted mastic bushes *Pistacia lentiscus* and a yellow-flowered composite *Helichrysum stoechas* that was just coming into bloom. There were small pools along the shore-line and these contained limpets and black sea-urchins. On the landward side of the pines the land was flat, with a passing resemblance to the Breckland of East Anglia with sparsely vegetated sandy soil. The asphodel *Asphodelus microcarpus* was present in immense numbers in some places and the tall white flowering spikes were an impressive sight against the setting sun. The bright pink wild gladiolas *Gladeolus* sp. were in bloom and there were carpets of the purple tassel hyacinth *Muscari comosum*. A Hummingbird hawk-moth *Macroglossum stellatarum* was seen visiting the flowers of a purple lavender *Lavandula dentata*. The bushes were alive with small migrant birds including a large number of redstart *Phoenicurus phoenicurus*, various green warblers *Phylloscopus* spp. and some black-caps *Sylvia atricapilla*. Overhead we saw our first swallows *Hirundo rustica* of the year and house martins *Delichon urbica* hawking insects. The lighthouse keeper kindly invited us to look for moths trapped around the windows of the light-house but, fortunately for moths, there were no ledges or recesses into which moths dazzled by the light would be retained. During our conversation in rudimentary English the keeper did, however, produce a dead specimen of the Swallowtail butterfly *Papilio machaon* which he had found on the site.

It was a beautiful romantic evening as the sun sank below the horizon. The night was calm, dry and starry with a dusk temperature of 12.5 degrees Celsius. After two hours of trapping all we had caught were a Yellow belle, a

small striped brown geometrid *Rhoptria asperaria*, a smaller mottled brown geometrid *Tephрина murinaria*, the Gem *Orthonama obstipata*, two Pine beauty moths *Panolis flammea* and thirteen individuals of *Metropoceros felicina*, a small orange-brown noctuid moth that looks a bit like the Quaker moths *Orthosia* spp. but which is placed in the Cucullinae close to the Minor shoulder-knot, *Brachylomia viminalis* (Leraut 1980). *M. felicina* is widespread in the western Mediterranean region, including Morocco and Algeria, but the larval foodplant appears to be a bit of a mystery. A search of the standard texts covering the area has revealed nothing on the subject and many books list the larva as unknown. This is inaccurate because Guenee had blown specimens in his collection and two of his specimens dating from the 1850s are preserved in the collections of the Natural History Museum, London. Irritatingly, neither appears to have any foodplant information on the labels.

The light trap catches may have been small during our visit but the scenery was delightful and the holiday most relaxing.

We are not aware of a moth recording scheme for Majorca as such, although Parrack (1983) mentions that some 250 species of macro-moths have been seen on the island and Cuello (1981) lists 328 species of moths of which 158 are macros. We trust that by publishing our records, however few, they may be of future use. For example, several of the above-named moths are not on Cullo's list, including *M. felicina*, and Martin Honey, who keeps a running list for Majorca, has not seen it on the island.

ACKNOWLEDGMENTS

We are most grateful to Barry Goater for his help with identification of the moths, to Martin Honey (Natural History Museum, London) for information on the *C. marshallii* situation and for searching for foodplant records of *M. felicina* and to Roger Key for examining the reared carabid beetle.

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OVERWINTERING SMALL TORTOISESHELLS IN SUSSEX

by Hugh Clarke (3910)

A friend of mine has something in the region of about 150 Small tortoise-shells (*Aglais urticae*) hibernating in an upstairs toilet. They generally move in around the 10th August, although in some years arrive as early as the 4th July.

They cluster around the cistern – the old fashioned overhead type, and also beneath the hand basin. Typically, they will also move to the walls. They have done this for very many years now, and come in via an opened window and depart the same way, usually in March.

However, this year they became rather restless and he opened the window in late January. There are always a few fatalities but rather more this year.

Normally, this room tends to be quite cold but recently the heating in the house has been up-dated and although the toilet is not heated the ambient temperature has probably increased – hence their desire to move earlier this year.

On checking my notes I find there have been as many as 250 in the roost, and certainly far fewer this winter than in previous years.

I assume that for the well-being of the colony he is doing the right thing by keeping the temperature as low as possible and allowing them to depart when they show signs of agitation.

Humidity clearly plays an important part and the fact that the cistern is of cast-iron must, I assume, help.

THE WOODPILE WILLIES

by Leigh Plester (2968)

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Having filmed some rock plants and scenes on a rather steep shore on Lake Päijänne on 2nd July 1993, I dumped the equipment near our sailing boat and clawed my way up the Scots pine dotted, moss and crowberry encrusted slope, with the intention of taking a well-earned break. What an idiot! Any field worker knows there is no such thing as a break in entomology. Some sadist had cut a couple of pine trees down a year or two earlier and on top of one of the stumps sat a "Persuasive Burgler" (*Rhyssa persuasoria*), a mammoth ichneumon I have known since childhood near the Wyre Forest in the English Midlands.

Joined by my wife, I sat down near the insect and watched it drive its long ovipositor, separated from its protective sheath, down into the soft wood. "If I fetch the Bolex, she'll up and away the moment I arrive back," I said, miserable as sin. We watched the insect's depredations for about five minutes until, with a sigh, I set off down to the boat, descending the steep slope zigzag from one level to another of the vegetation encrusted bedrock, part of the famous Baltic Shield, the lake glittering beyond and the sound of the wind on the hot day soft through the pine needles.

Brow beaded with sweat, I arrived back on top of the slope and set the camera, complete with heavy 120 metre cassette, on its tripod. Frass me, the beast was still there! And she remained there, as I used up the remaining 30 metres of film with shots from various angles. Inspired by my success I laboriously, without benefit of rope, abseiled the heavy ciné gear down to the boat and then, using my teeth as a piton, hauled up my Canon 35mm equipment, recently imported (down the green lane at the Customs, naturally) from Singapore and Borneo. I discarded several litres of sweat up the way up.

There must be something wrong with autofocus, for the *Rhyssa* considered my 50mm macro lens for less than a millisecond, took flight, came back for a quick gazebo at the latest technology advance from Japan, and with a brisk buzz of her wings disappeared into Central Finland.

Satisfied with the day's bag – how little the triumph of a good day in the field has changed from the days of the little boy with the muslin net! – I clambered down to the boat with my wife and we went back to the horrors of civilisation.

About a year before, I had instructed a friend of mine to fell a couple of spruce trees. Being a lazy fellow, I had stacked the cut sections on a couple of pallets and taken them down into the sloping field forming two-thirds of our one hectare plot. On 11th June I decided it was high time to get some winter

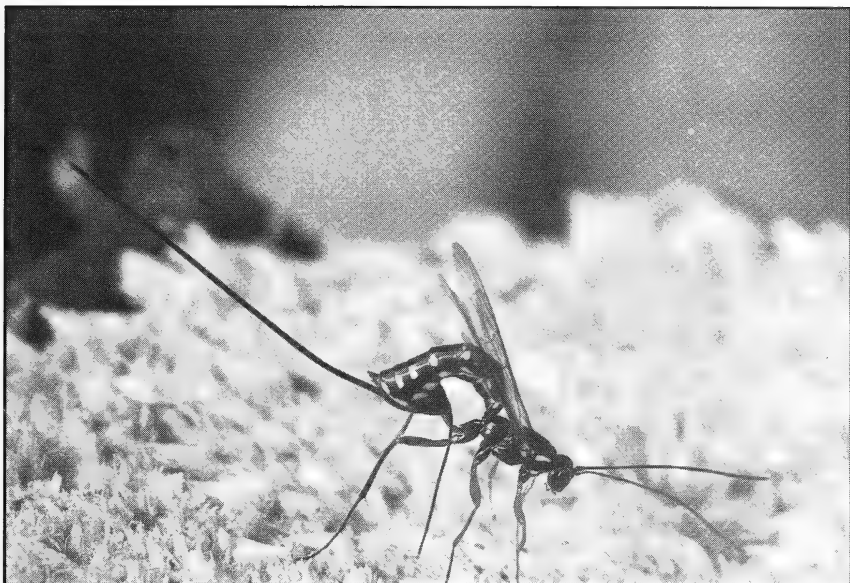


Fig. 1. With abdomen arched and ovipositor freed from its protective sheath, a
“Woodpile Willie” gets to work on a spruce log.

Plester

fuel into the garage while the wood was still dry. It was a hot day and, after a couple of bottled beers, I was feeling a bit like Keith Floyd with his “quick spin, if you please, Clive.” Heat notwithstanding, I managed to split some logs rather than some knee caps until, preparing to place on the stack lining the garage wall a piece I had just cleaved, I noticed a *Rhyssa* sitting there with some three centimetres of her ovipositor embedded in the wood. Despite the heavy blows from the axe, the icheumon was still perched on the bark looking as happy as a tramp locked inside a distillery.

Post-haste I fetched one of our old Olympus cameras, which I remembered having loaded with T-Max 400 – a film I have constantly raved about – and proceeded to bang off a couple of rolls from close quarters, using my old faithful 50mm macro, battered and discernibly lacking in modern multi-coating. I doubt whether I'm the first photographer to get only 36 pictures instead of what should have been 72, because I refuse to believe that others (pro's even!) do not occasionally forget to check that there's actually a roll in the camera body when they start banging away! Well, after I had inadvertently fired the first 36 shots “blank” as it were, I placed an *actual* roll of T-Max 400 in the Olympus and committed the “Willies” to film from every which-ways.

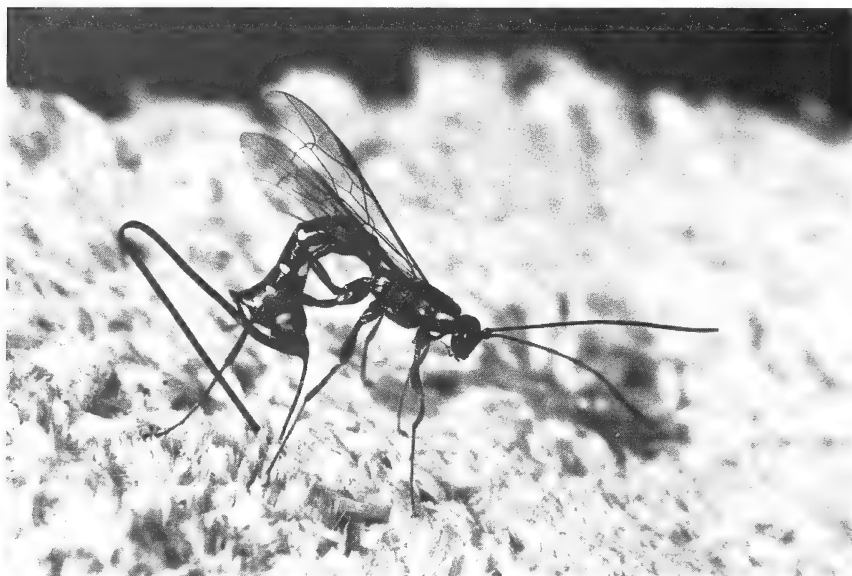


Fig. 2. A few heaves later and the ovipositor has penetrated the wood almost up to the insect's abdomen.

Plester

Having loaded a second roll (or third, if you insist on counting the inadvertent dry run), I began to think "By jove, this is the quickest egg-layer in the Nordic region", as I spotted old "Woodpile Willie" again and again on logs I was driving my axe into. It takes a long time for the Plesterian grey cells to adapt to any off-beat situation these days, but a beer or so later I suddenly realised that the insect was expanding and shrinking completely out of synch with my "Clive, quick spin if you please" quaffing. Of course, anybody less than a blithering idiot would have concluded at once that there were actually several of the wasps zooming around, some much stockier than the others. In fact, the size difference was almost as staggering as I was.

But in addition to being surprised at the failure of the axe to dislodge these tenacious insects, I'm wondering why the "Willies" continue going into the gloomy interior of our garage and happily laying eggs in the split firewood. They've been in there in the half light every day and I saw some there again this morning (21st July), all busy probing with their antennae and then arching their backs prior to drilling into the wood and laying an egg on some unsuspecting winter-stored wood wasp larva feeding out of sight in our firewood.

Obviously the “Willies” are willing (Oh, dear!) to enter a cooler situation to achieve this end. But would these new conditions be so different from the days, before the advent of commercial logging, that saw tree giants in gloomy forests crashing to the ground to embark on the long process of decay in the hostile Nordic climate? As these ancient trees reclined on the ground, damp and decay would begin to detach their bark during the primary stages of decomposition – the stage at which one can imagine the –“Willies” assembling to seek out the beetle larvae that would already be growing fat on the ligneous tissue?

Could my dim garage with its wood-pile be just a modern substitute for the shady forests that used to cover the boreal regions? It's a question that's enough to give you the title to this article.

THE LIME HAWK IN STAFFORDSHIRE

by Jan Koryszko (6089)

In the autumn of 1992, Mr Alan Flanagan was doing some gardening in Normacot Longton, when he found a pupa, just under the soil surface, close to a lime tree. The pupa was placed in a container, and some months later, a Lime hawkmoth (*Mimas tiliae*) emerged. Several lime trees grow in the area, although in recent years a number have been felled. I have never met with this moth in the area before, although during the summer of 1993 I found a dead specimen on the roadside at Meir Square.

MARSH FRITILLARY OBSERVATIONS

by Michael Salter (9863)

Has Britain been subjected to the same cold, wet summer, with consequent lateness of Lepidoptera, as we have had in Ireland in 1993? With almost constant cold, wet weather from mid-March to mid-August, the Marsh fritillaries (*Eurodryas aurinia*) in captivity in my garden, whilst emerging at the end of May, “sat around” so that I got no egg batches until 22nd June. I noticed that the resulting larvae were still two to three weeks late by hibernation, which occurred in mid-September.

Several field trips revealed a similar pattern in the wild, the last as yet un-hibernated *aurinia* web I found was on 24th September. Other species were similarly affected and I netted a well-worn female Silver-washed fritillary (*Argynnis paphia*) on 29th August.

BUTTERFLYING IN SCANDINAVIA, SUMMER 1992

by P.J.C. Russell (8977)

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My brother-in-law, Mike Grundy, and I left Sussex for Harwich on 28th May in his 20-year-old Dodge Superior motorhome, which he had prepared with great care for the trip. That night was spent on the quayside in steady drizzle, which continued as we boarded the midday ferry to Gothenberg. After an excellent buffet dinner for under £10 each, we spent a somewhat restless night, our cabin being rather too far aft, but awoke to find a beautiful sunny morning with not a cloud in the sky. With minimal customs formalities we were away on the road by 12.15 heading for Stockholm. By early evening we were 270 miles from the port and parked beside a gravel road running through mixed woodland near Aker, just south of Strangnas, under a cloudless sky; it was almost windless and the smell of the pine trees was quite overpowering; however as the sun went down the temperature fell from 20°C to 10°C in about an hour and the resinous smell dispersed.

After a peaceful night we were woken by the repetitive calls of a cuckoo near the van; with the sun already climbing over the tree tops the temperature rose as quickly as it had fallen the previous evening and by 8.30, as I wandered along a stony track, butterflies were already beginning to spread their wings to catch the morning sun. *Lasiommata petropolitana* (Northern wall brown) and *Clossiana euphrosyne* (Pearl-bordered fritillary) were fresh and both sexes were common in the woods, together with a few worn *Callophrys rubi* (Green hairstreak) and the post hibernation *Gonepteryx rhamni* (Brimstone). *Pararge aegeria* (Speckled wood) and *Leptidea sinapis* (Wood white) were flitting in and out of the sun along the verg forewing) and white (on the hindwing), with dabs of brown shading. Being small insects, they are easy to pursue and catch. It is (Swallowtail), *Mellicta athalia* (Heath fritillary), *Pieris napi* (Green-veined white) and *Coenonympha pamphilus* (Small heath) were noted during the hour's stroll. Later that morning we found a marshy area with stunted pines at its centre and on wading in I spotted a large, dark butterfly streaking away from its resting place on the trunk of a small pine tree —my first sight of *Oeneis jutta* (Baltic grayling). After some chasing with trousers wet up to my knees, I returned to the van with a torn net bag but with three fine fresh males; I had bagged my first Scandinavian butterfly at the first locality of the trip and, as I sat down to repair my damaged net, I hoped that this was the prelude of things to come.

We decided to "do" Stockholm the following day and so we set off during the afternoon for a convenient campsite at Bredang, just a few minutes by train from the City centre; on the way we passed a thermometer

on a building, which read 28°C. I think this may have been a little optimistic but it had certainly been warm chasing butterflies in the bog! The following morning we took the T-bana (Underground) into the City centre and spent a very pleasant morning sightseeing, including a boat trip along the waterways and a walk around the cobbled streets of the "old town". By early afternoon we found the heat of the city and the abundance of *Homo sapiens* (Humans) somewhat oppressive and so, despite of some sightings of well endowed females of the species sunbathing *au naturelle* on the banks of the canal, we returned to the campsite, had a late lunch and set off north-westwards, skirting Stockholm, towards Borlange.

By early evening we had reached Floda on the western bank of the Vasterdalalven river and, since the area we wished to visit was on the other side of the river and I wanted to get an early start the next morning, we decided to cross the river and park for the night on the other side. On approaching the old wooden bridge by the church we noticed that it had a weight limit of 2.5 tonnes and, as our loaded motorhome was probably in excess of four tonnes, we thought that it might be wise to find another bridge! We found the next bridge to be of iron construction and much more satisfactory; we crossed it and drove back to the wooden bridge along the east bank and then headed away from the river towards Hagen. The narrow gravel road became a narrower hard track. As we approached the river again, the hard track became an even narrower soft track; we began to have second thoughts. Was this really the place to bring an eight foot wide by twenty foot long motorhome? It was definitely not, but (as nobody was volunteering to reverse back down the track in the fast fading light!) we squelched and squeezed our way onwards. As luck would have it, just as we were beginning to despair of finding a place to stop, we managed to pull off just clear of the track onto a patch of grass by the river bank, only a few feet from the swirling water.

The rattling of passing trains during the night confirmed that we were close to the railway line, which ran through the area I wanted to search the next morning. We were again woken early by continuous cuckooing and a brief foray further down the track confirmed both the proximity of the railway and also the existence of a proper gravel road, which was signposted to the iron bridge which we had crossed prior to our extensive and unnecessary detour! We moved the van to an excellent parking spot on the far side of the railway line in a grassy area by a small backwater of the river.

After breakfast I set off to investigate Storamyran, a large boggy area stretching on both sides of the railway, some 200 metres above sea level. As I emerged from the woodland which surrounded the marsh, the sun was already warming up and I immediately flushed a male *O. jutta* from

its resting place on a fallen pine stump. They were common here together with a few freshly emerged females, which had very bright orange discal markings around the ocelli on the forewings. *C. euphrosyne* was the commonest fritillary here, but in the wetter parts of the marsh *Proclossiana eunomia* (Bog fritillary) was quite frequent. However, as yet, only the males had emerged and they were of the subspecies *ossiana*, with brightly silvered marginal and discal spots on the hindwing undersides. A light yellow male *Colias palaeno* (Moorland clouded yellow) sped past but I managed to net it after a chase across the marsh. The sun was beaming down from the clearest of blue skies and it was becoming very warm chasing *jutta* in and out between the stunted pines and, as I now had a fine series of males and a few females, I decided to return to the van along the railway line rather than push my way back through the trees onto the road. This proved to be a good choice as apart from finding some *P. napi*, *G. rhamni*, and a few *Anthocharis cardamines* (Orange-tip), I came across a small yellowish skipper, which on netting I found to be *Carterocephalus silvicolus* (Northern chequered skipper), another species new to me. During the afternoon I took three more fresh males from the same area and noted a single *P. machaon*, a very worn *Polygonia c-album* (Comma) and a freshly emerged female *Eumedonia eumedon* (Geranium argus) together with a few *P. aegeria* and *L. petropolitana* sunning themselves on the gravel roadway.

After a clear, starlit night with the silence being broken only by a few passing trains hauling timber to the coast and in the early morning of course by the usual cuckoo, 3rd June began bright and sunny and I was up, breakfasted and away to investigate another marsh by eight o'clock. This slightly drier area, called Rummyran, was rather more open but *O. jutta* was once again very common, but here only the males had yet emerged; perhaps the females emerged a little later at this slightly greater altitude of 240 metres. The ubiquitous *C. euphrosyne* and *P. eunomia*, the latter represented only by males as yet, were once again common, however, I did encounter one additional species here, *Pyrgus centaureae* (Northern grizzled skipper) but only a single male. Later, on returning to the van, I netted a single male *M. athalia* and another of *Pieris rapae* (Small white). We had hoped to see the first *Erebia embla* (Lapland ringlet) on these marshes but it was not to be; possibly a little too early in the season?

About mid-morning we headed back to the main road, crossed the river and turned north towards Leksand. We passed through the town, heading for Rattvik but then turned off the main road towards Lake Siljan, one of the larger Swedish lakes, on a minor road, which passed through some sloping flowery meadows, beside which we stopped. On alighting from the van and taking a couple of paces into a meadow, a small brown butterfly flew up out of the grass; it looked brighter and

more colourful than *C. pamphilus* and it proved to be one of many male *C. hero* (Scarce heath) which abounded in these meadows. The habitat here was very much drier than that occupied by this species in more southerly latitudes, for example in France. *C. silvicolus* was also fairly common here with both sexes flying with *E. eumedon* and the males of *Aricia artaxerxes allous* (Mountain argus). The males of *Ochlodes venatus* (Large skipper), *Clossiana selene* (Small pearl-bordered fritillary), *M. athalia* and *Cyanirus semiargus* (Mazarine blue) were all freshly emerged and flying with both sexes of *L. sinapis*. Once again a single specimen of *P. machaon* was spotted and a few very ragged *G. rhamni* females were seen searching for buckthorn bushes along the hedgerows. Two days later on the morning of 5th June I netted the first female *C. hero* in brilliant sunshine. She was very fresh and I boxed her before risking placing her in the killing jar, for her wings were still a little floppy and obviously not quite dry. We drove back towards the Baltic coast, skirted Gavle to pick up the main E4 highway, heading north again; here we had our first rain since arriving in Sweden, a very brief but heavy thunderstorm. Another one followed a little later but by the time we had parked for the night just south of Soderhamn it had cleared. We spent the evening watching the birdlife on the lake Jarvsjon, this included a Black-throated diver which patrolled up and down the lake all evening.

The following morning broke fine and sunny with not a sign of the dark thunder clouds of the previous day and we were soon on the road again heading north towards Sundsval. We stopped in mid-afternoon not far from the town by some pretty overgrown meadows, where we decided to park up for the night. A short stroll along the road beside the meadows provided some fresh males of *Parnassius mnemosyne romani* (Clouded apollo), a species known to occur in this area, but more usually found in mid June; the females had not emerged yet. Other species at this locality were *P. napi*, *A. cardamines*, *C. semiargus*, *A. artaxerxes*, *E. eumedon* and *C. pamphilus* together with a few *C. euphrosyne* and *M. athalia*, all of which had been encountered before. A quick look round in the morning revealed nothing new and so we were soon on our way again northwards into Angermanland. On seeing an interesting-looking marsh beside the road near Angersjo, about 50 metres above sea level, we stopped to investigate. *O. jutta* was again very common and fresh and it seemed as if we were moving north at the same pace as the emergence of this species; *P. centaureae* was quite common here with both sexes flying with a few males of *P. eunomia*, again represented by the ssp. *ossiana*. I soon spotted a fritillary, which we had not seen before, rather larger than *C. euphrosyne* and much slower in flight. This proved to be *Clossiana frigga* (Frigga's fritillary). The males, some of which were quite fresh, were fairly large for this species but the females were enormous, darkly

suffused on their upper sides and very brightly marked beneath; these were my first sighting of a truly northern fritillary. However, we had still seen no signs of *E. embla*; surely in spite of the warm weather making it a very early season, it could not be over already.

The next day we headed inland in the warm sunshine passing through a mixture of farmland and forest. We stopped for a coffee-break by an embankment covered in geraniums in full flower and here we found the first *bicolorata* of *P. napi* flying with the more usual female form. Here too was an abundance of *E. eumedon* and a few male *C. silvicolus*. During the afternoon we searched a few marshes but without coming across anything very exciting and thus returned to the Baltic coast to spend the night on the campsite at Skelleftea; we were much in need, by this time, of making use of the washing machines at a regular campsite! Having managed to get two loads of clothing washed and dried during the evening, I began to smell rather less of a bog and more of spring flowers!

The following morning we set off along the coast, visiting a few more marshes along the route, but failing to find *E. embla*. We now considered it a real possibility that this species could well be over in the marshes along the coast, and so we decided to head inland once again to gain height and investigate more marshes. We turned off the highway at Pitea, heading towards Langtrask. We stopped at a boggy area near Fagerheden at just over 200 metres, where I noted the females of *P. eunomia* were just emerging and flying with some more *C. frigga* and some rather worn *C. euphrosyne* but still no sign of *E. embla*. We continued our detour inland a little further, climbing steadily until we reached the highest point of the road just short of Langtrask. Here we found a large and very wet marsh, some 325 metres above sea level, situated near the village of the same name — Finnmyran. Some *O. jutta* were darting about the trunks of the stunted pine trees around the edge of the marsh but I caught sight of a rather smaller and somewhat quicker moving butterfly, which in flight looked very much like a small *jutta*, with the same habits of flying in short bursts from one tree trunk to another. After a few misses I finally netted one; it was *E. embla* — at last — but it was a very ragged male, no use at all for the cabinet! I crossed the marsh with some difficulty to a much larger group of stunted pines. This area was rather more shaded by the taller pines just behind them, being on the south side of the bog, and it was here that I managed to get a reasonable series of males and a few much fresher females. It would seem that this species emerges at the first sign of warm weather and, because of its habit of flying quickly among dead pine branches, it becomes worn very soon and with its flight impaired probably gets eaten by birds quite quickly. Its flight period could thus be very short and it could well have been that our theory that the species was already over in the low level

marshes near the coast was correct, in spite of the fact that it was still only the beginning of the second week of June. Other species flying on this marsh were some rather worn *C. rubi*, *C. euphrosyne*, which were noticeably darker but not particularly smaller than usual, and *P. eunomia*, which also appeared a little darker than normal. Among the examples of this latter species, I took a fine male aberration, in which the usual dark markings were elongated into rays; even the underside silvered marginal spots were expanded into wedges between the veins, a remarkable specimen.

After travelling east around the top of the Gulf of Bothnia on the 10th June, we crossed the river Torneälven into Finland at Haparanda and turned north again following the river. We crossed the Arctic Circle about mid-afternoon, it was very hot in the sunshine and as we browsed around the souvenir shop and furnished ourselves with an icecream we could not really believe that this was the Arctic at all; we must have been heading south all the time! I just had to stop a little further up the road to bag a few more *E. embla*, which were now so common flying along the road verges apparently at some distance from their marshy habitat, to prove beyond any doubt that we were definitely in Lapland and not the South of France! We pulled off the road a little further on, into a layby near the river, by a stretch of rapids. Some Crucifers were growing here in a small grassy area by the riverbank and in late afternoon I took some more examples of *P. napi bicolorata*, which were flying with a few rather worn *A. cardamines* and even later in the evening, about 21.30 hours, I took a fine fresh female *E. embla* flying lazily along the riverbank but not easy to see in the fading light under the trees. The following morning a few *E. embla* were taken sunning themselves along the roadside and then we set off along the E78; this was an amazingly good road with very little traffic. It was not unusual to travel for 20 minutes or more without seeing another vehicle. We stopped for lunch just south of Sieppijärvi and I went off to investigate yet another bog just beside the road; there were many *E. embla* flying here with *C. euphrosyne* f. *lapponica*, *P. eunomia ossiana* and *C. frigga*. A little later as I was returning to the van I found a pair of *E. disa* (Arctic ringlet) *in cop*; unfortunately the male was already slightly chipped, but I was most surprised to find this species present on the same marsh as *E. embla*. Henriksen and Kreutzer (1982) in their excellent book on the butterflies of Scandinavia suggest that, and I quote: "*embla* and *disa* cannot be found on the same marsh area". However, there was no doubt that in this particular locality *embla* and *disa* were breeding on the same marsh, which was situated some 175 metres above sea level near the village of Kuusisaajo. This habitat would seem to be very much lower in altitude than that in which *E. disa* is usually found (according to H. & K.: "above 350 metres.") in spite of it being very much in the southern part of the range of this species, where

one might suggest that the species would be found at higher than usual altitudes.

In the afternoon we continued north and then turned east at Muonio towards the Pallastunturi National Park, at which we arrived in the early evening. The hotel and tourist station had not yet opened for the summer season and in the shaded entrance to the hotel stood a Reindeer panting from the heat. Our thermometer read 26°C in the shade; inside the van, however, it was 31°C and outside in the sunshine it was probably rather hotter. In spite of the high temperatures, it certainly looked more like the arctic here at 450 metres, with huge snowdrifts lying in the gullies. *E. disa* was flying in some numbers around the tourist station over the open marshy ground. There was a large car park for overnight parking, occupied by only two other vehicles, and we pulled in for the night as the sun dropped behind the hills, which reached some 200 to 350 metres higher, to the north of us. The temperature was soon falling rapidly and by 23.00 hours, although still daylight, the thermometer outside showed only 8°C; Mike suggested that maybe we test the space heater in the van "just to make sure it works properly"!

The morning of the 12th was, yet again, sunny and it soon became very hot outside in the sunshine with no perceptible breeze. We had covered over 1800 miles since leaving Gothenburg, had seen only a few minutes rain, very few clouds and had felt almost no wind, to the extent that it was quite pleasant to feel a breath of cool breeze, drifting off the snowfields, as I climbed up the hillside opposite the car park. Butterflies were numerous if not particularly varied in the marshy areas, with the most common species being *Clossiana freija* (Freijja's fritillary); although the males were becoming rather worn, there were a few still fresh and the majority of the females were in good condition. This was our first sighting of this species and once again I suspected that it had already disappeared from the lower marshes further south which we had visited earlier in the trip, for this species can be found further south than any of the other truly northern Fritillaries, but perhaps we had overlooked it. *E. disa* was also quite common flying with the occasional male *Erebia pandrose* (Dewy ringlet), this latter species becoming more common as I climbed higher up the hill. On reaching the flat, plateau-like top of the hill, I took my first female *E. pandrose* resting among the short grass stems between some boulders. Apart from this single specimen the hilltop was devoid of butterflies; it was obviously too early for the Arctic graylings, which can be found here at an altitude of about 650 metres later in the summer.

After returning to the van for lunch, we agreed that with no shade for the van we were going to roast if we stayed there much longer! We set off back to Muonio, picked up the main road again and headed towards

Enontekio and the Norwegian border; we spent our last night in the Finnish Lapland on high ground just south of the border with a fine view of the midnight sun. We crossed the border into Norway early the following morning, passed through Kautokrino and climbed up onto the high plateau heading towards Alta. Only the road was clear of snow up here and despite the bright sunshine it was very cold outside with a fairly strong breeze blowing across the snowfields. With no trees to lessen the bite, it felt as if we had reached the Arctic at last! In a small valley where there was some shelter from a few stunted Birch trees, I found a pair of *C. freija* together with a single male of the species but nothing else seemed to be flying. We descended from the plateau down a narrow, winding road, which followed the rushing torrent of the Eibylva river, through a gorge. At times the road looked almost as if it were going to disappear into the river, as it hugged the steep sides of the ravine. Luckily we met no other vehicles coming up the road, as at times, we were forced to use far more than our fair share of the carriageway to manoeuvre our vehicle round the tight bends.

We reached the flat flood plain of the Alta river safely and before getting as far as the town of Alta we crossed the Eibylva, by now a far wider and more peaceful river, and followed a valley southwards. The sides of the valley soon closed in and the metalled road came to an end; I got out of the van to investigate the rocky gravel track that rose steeply out of the parking area at the end of the road. After some consultation with Mike, we decided that I should walk up the track to see if it was good enough to drive the van up. About five minutes later while still continuing up the track, which despite a few potholes and ruts seemed to be in reasonable order, I heard a heavy vehicle crawling behind me; Mike had decided that since I had not returned quickly it must be alright to proceed. Having stopped a car which was on its way down and conveyed to the driver the fact that a very large vehicle was on its up, I finally persuaded her to wait in a convenient widening of the road. I jumped aboard the van and we continued up the steep track, brushing the stunted birches on both sides.

Mike was beginning to look worried; the transmission fluid temperature was rising well above normal. We needed to find somewhere to pull off the track to let it cool down before we sustained any permanent damage; luckily, just around the next bend the track widened out and there was an area of hard standing just wide enough to draw off the track. It was a beautiful spot just above the tree line; to the west we could see a huge waterfall where a wide stream tumbled off an area of flat rock into a valley far below. To the east and just above us, were grassy steppes with rock outcrops covered in wild flowers.

(to be continued)

BOOK PRICES – ENTOMOLOGICAL OR OTHERWISE

by Richard A. Jones (8355)

13 Bellwood Road, Nunhead, London SE15 3DE.

The letter by Keith Lewis published in the *Bulletin* recently (Volume 52: 203) has prompted me to make a few observations on the cost of second-hand books, entomological and otherwise. Having started off my working life in an “antiquarian” bookshop before going into publishing, I hope these remarks will take some of the incensement out of book buying.

The Editor was correct when suggesting that books are priced according to what the seller thinks the market will bear. And although this often reflects the condition and rarity of a book, it usually has more to do with the price the bookseller paid for the book in the first place.

A bookseller, no matter how knowledgeable of the trade, cannot be expected to “know” the best price for every book ever printed, even with recourse to card indexes, computers and reference to countless book catalogues, trade journals and “asking around”; most books are simply not worth the trouble of the research. A bookseller generally estimates a price, based on the subject matter, age, size, number of pages, number and type of illustrations, type of binding and any other immediately obvious clues.

On the whole a bookseller will only look positively at a potential purchase if he (or she) thinks it could be sold for a suitable “mark-up”. For “medium-priced” books, mostly £5 – £50, but maybe up to £200, the usual mark up is between 75% and 100%. But before anyone starts to suggest that this is preposterous, compare it to standard practice in the new book trade.

Bookshops selling new books get their stock from publishers or distributors and sell them at a set price. The “Net Book Agreement” (NBA) means that large and small bookshops alike sell the same book at the same price. Even if the NBA is abandoned, this will only have a significant effect on the top-selling books, the few best-sellers out in paperback. Whatever the price of a book, a publisher lets a bookseller have about 35% discount. From the bookseller's point of view this equates to a “mark-up” of 54%. From a practical point of view it means that where a “new” book may be bought for £5 and sold for £7.69, an “old” book bought for £5 will be sold for between £8.75 and £10.

This, however, does not necessarily mean that the second-hand booksellers are fleecing the public. New bookshops have the publishers queuing up to sell their books to them; the publishers promote and advertise books for them; the books might be considered intrinsically more attractive because they are “new” (ie “novel”); the same book, can effectively be sold over and over again, and books specially ordered by customers allow instant no-risk profits.

Second-hand booksellers on the other hand have to do their own advertising and marketing through catalogues; once they have sold a single copy of a book that is it unless luck brings another copy along shortly; it is hardly ever possible to summon up a particular book to order, as anyone desperately seeking that long-out-of-print monograph must know.

Although some books get into second-hand bookshops by private sale, a person entering a shop to prompt the bookseller into offering money for them, most books are bought from other booksellers, from auctions, from house clearances or from library sales. Some of these library sales are open to the public and books go for a few pennies, but libraries do often know the value of the books they are releasing and sometimes invite bookshops to make sensible offers for them.

This often means the bookseller quickly has to estimate the value of a whole pile of books, most which are not very attractive, offer a single price for them, take them all away, then recoup the costs or make a profit from a relatively small number of the "better" books in the "lot".

It is not unknown for independent, self-employed, "runners" to buy books, particularly from library sales, then take the books and hawk them about the various bookshops they think might be interested. Whatever the route, there is no way of knowing how many times any book, library or otherwise, has changed hands, each time its price doubling.

About the only place a given book might be expected to have any sort of "set" price, would be at a book auction. Theoretically these are attended mainly by knowledgeable antiquarian booksellers who, jostling against each other, drive the bidding up to the highest appropriate price. Again, for "medium-priced" books, this "appropriate" price is usually about half the antiquarian bookseller's catalogue price, and makes auctions an attractive place for the non-bookseller to buy books if the chance arises. The trouble is that it is usually only the more expensive books which form individual "lots". A bookseller's mark-up on a single high-priced book may be 50%, 30%, or even as low as 5% if it is being bought especially for a particular customer. The auction house will itself make a profit of about 10% – 5% charged to the seller and 5% extra charged to the buyer. A good source of extraordinary bargains at auctions comes from the jumbled lots where cheaper books of mixed condition and subject are lumped together in a box for ease of carrying rather than ease of examining contents.

As any watcher of the BBC's *Antiques Roadshow* will know, the valuations given in respect of replacement for "medium-priced" antiques are usually double what something will fetch at auction. Why? Because sellers of antiques, like sellers of antique books, sell them at double the cost. Higher value objects will again have a mark-up of 50% or less.

Without the sure knowledge that a given book will sell, second-hand booksellers are often loath to invest their money unless they feel that they will get a reasonable return. And though the return they generally seek might be 100%, if they find a particularly rare or valuable book at what they consider to be a bargain price there is no reason, in this market-driven society of ours, why they should not increase the mark-up and price the book at what they think they can get.

Conversely, if they are not aware of a particular book's value they will probable underprice it, allowing us, the customers, to have a bargain ourselves. Would anyone be incensed by guilt upon finding a copy of Fowler's *British Coleoptera* for £20? Would anyone suggest to the bookseller that it was far too cheap and demand to pay £125 for it? I think not.

I am a self-confessed bibliophile, a lover of books old and new, and the search for a bargain has driven me to distraction on no end of occasions. Sometimes I find a gem, a glittering prize for a few pence or a few pounds, and sometimes I flinch at the (what seems to me) ridiculously high price of a book. But I can't overly criticise the bookseller and I can't keep away.

MERCURY VAPOUR ELECTRICAL COMPONENTS

by *Stuart Campbell (19654)*

4 Leasowe Moss, Moreton, Wirral, Merseyside L46 3SU.

I recently received a copy of the latest (1993/94) Philips Lighting Catalogue (Reference PL4520.4/93). I soon realised it contained much useful information relating to the electrical components required to run m.v. lamps at sheets or within traps. I thought it may be useful to pass this on to interested readers as, if you are like me, ascertaining precisely the parts you need can prove difficult. Below I have set out the details of various items from the catalogue which can be obtained via local electrical wholesalers.

A. Lamps

Markings

	UK Marking	Philips International Marking
Mercury Fluorescent	MBF or MBF/U	HPL-N
Mercury Fluorescent Blended	MBTF	ML
U.V. "Blacklight"	MBW	HPW
U.V. "Blacklight" Blended	MBWF	MLW

The non-fluorescent versions of the mercury lamps *viz* MB/U and MBTL appear to be no longer manufactured in the UK if indeed anywhere. If any reader does know of a source I would be interested to hear of it. The "blended lamps" require no control gear to operate them.

Availability

Type	Wattage	Cap	Cat. No.
HPL-N	80W	3 pin BC	80 BC3 HPLN
HPL-N	80W	ES	80 ES HPLN
HPL-N	125W	3 pin BC	125 BC3 HPLN
HPL-N	125W	ES	125 ES HPLN
HPL-N	125W	GES	125 GES HPLN
ML	100W	BC	100 BC MLL
ML	100W	ES	100 ES MLL
ML	160W	BC	160 BC MLL
ML	160W	ES	160 ES MLL
HPW	125W	3 pin BC	HPW 125 BC 3T
HPW	125W	ES	HPW 125 EST
MLW	160W	ES	MLW 160

B. Control Gear

Gear boxes are available each fitted with pre-wired control gear for the appropriate lamp. They contain the appropriate current limiting ballast and capacitors for power factor correction (which reduces the power requirement) required to successfully operate the chosen lamp, these being housed in a black "Zintec" powder-coated metal box measuring 285mm x 198mm.

Lamp Wattage	Cat. No.
80W	YGB 80M
125W	YGB 125M

C. Separate Ballasts

Lamp Wattage	Cat. No.
80W	BHL 80 L32
125W	BHL 125 L32

D. Separate Capacitors

Lamp Wattage	Cat. No.
80W	L4008
125W	L4010

Much further detailed information on these matters, including wiring diagrams and trap construction, may be found in the most useful publication by Heath (1976), a new revised (3rd) edition of which is in the course of preparation.

REFERENCE

Heath, J. (1976). *Insect Light Traps* 2nd Edn. AES Leaflet No. 33.

FURTHER VANESSID ACTIVITIES

by Terrence R. Smithers (9447)

3 Farleys Close, West Horsey, Surrey KT24 6NB.

In an earlier article (*Bulletin* 52: 205-207) I described the events leading up to a very late pairing of the Red admiral (*Vanessa atalanta*) in my greenhouse (butterfly house). In this second part I shall continue to describe how I attempted to overwinter the resulting adults reared from this late-bred generation.

The total number of larvae from ova collected from the greenhouse by 8th November 1992 was approximately fifty. They were doing well in plastic boxes, but I realised they would need more space as they grew, so I built a wooden box, 16"x11"x8" from plywood, and painted it white. In this I placed the larvae. The box had a piece of fine-mesh black netting across the top secured with an elastic strap. More ova were collected from the greenhouse and as these hatched and became second instar larvae they were removed from the plastic boxes and placed in the wooden box.

Food was supplied with cut nettles pushed into damp compost in two plastic flower pots and changed daily. The wooden box was placed on a north facing windowsill in a bedroom. The larvae grew extremely well in these conditions.

On Saturday 28th November 1992 the first chrysalis was formed, followed the next day by six more. By Wednesday 2nd December 1992 the main bulk had pupated (approximately 65); Ninety-five chrysalids were obtained and the first adult emerged on 16th December 1992 and from then on a steady emergence continued through into January 1993. On Tuesday 5th January the last of the 95 had emerged. Twenty-two were given to my friend and fellow *atalanta* enthusiast Jeff Boswell who wished to try some experiments of his own.

As the first chrysalis started to colour-up I hastily prepared a special indoor overwintering cage, since I realised that *atalanta* does not truly hibernate, but merely becomes semi-dormant. I decided to experiment thus:-

My bedroom was to become their rest quarters. A hanging cage of cylindrical type with fine mesh, black netting one metre long with a 350mm diameter was hung from a shelf in the corner of the room. Over the cage a sleeve made from black dustbin liners, these being used to keep the butterflies dark and thus less active. Also the central heating radiator in the room was shut down and curtains kept closed in order to keep the room temperature cold, once again to keep the butterflies inactive.

As the cage began filling up with the imagines, I had to make sure they were adequately fed. So at least once and sometimes twice a week the sleeve was removed and an anglepoise lamp fitted with a 100 watt halogen bulb was placed approximately six inches above the cage and switched on. This soon

solution soaked into cotton wool pads placed on the netting. After about one hour's feeding they were once again placed in the cold and dark sleeve.

This activity continued from 16th December 1992 through to 17th March 1993 when the butterflies were released back into the greenhouse. During this period of time only three imagines died. The temperature in the room never dropped below 4°C and the last imago to be added to there was on Tuesday 5th January 1993.

On Wednesday 24th February 1993, I decided to try a small experiment with the imagines and seven were removed from the cage and placed outside in the greenhouse. It was a sunny day and the midday temperature when the butterflies were released outside was 21°C. They immediately went into courtship flights and by 3.00pm a pairing had taken place. This pairing turned out to be fertile as the female went on to produce hundreds of fertile ova in the coming weeks. However, no other pairings occurred during the next few weeks so it was not until 17th March 1993 that I took the gamble of releasing all the remaining butterflies into the greenhouse.

They were released early in the morning and by 3.00pm I knew the gamble had paid off as three pairings had occurred, the day was sunny and the greenhouse temperature went up to a maximum of 34°C.

From that day onward, pairings occurred with ease and I had many ova and larvae to deal with, so the experiment ended as a great success proving that it is possible to bring Red admirals through the winter, not by trying to hibernate them, but by slowing them down enough to make them semi-dormant, and by letting the adults gorge themselves on a feeding solution. I found they drink so much that their abdomens looked as if they would explode but did not harm them and they were all fertile in the spring.

SOME STAFFORDSHIRE LEPIDOPTERA NOTES FOR 1993

by Jan Koryszko (6089)

During the summer of 1993 the Barred yellow (*Cidaria fulvata*) turned up in my garden in some numbers, perhaps because I planted a hedge some ten years ago, which is now well-established and contains wild rose taken from cuttings some miles away. I have beaten this moth out of both wild rose and hawthorn at Barlaston Rough Close Common, but have only had singletons in my garden before now. In 1993 I have also taken the Buff arches (*Habrosyne pyritoides*) which is a local species in north Staffordshire; also the Miller (*Acronicta leporina*), again not a common moth in my area and both were found at Barlaston Rough Close Common. The melanic form of the Miller (*A. l. melanocephala*) also occasionally occurs in the county. The Cinnabar (*Tyria jacobaeae*), although common, was not as plentiful as in 1992. As I expect other entomologists have found, 1993 was a disappointing year for the butterflies.

LARGE COPPERS – APPEAL FOR HELP

by Dr Andrew Pullin (9559)

Department of Biological Sciences, Keele University, Staffordshire ST5 5BG.

If you currently have a colony of Large coppers you may be able to help me in their conservation. *Lycaena dispar* is now among the most endangered butterflies in Europe. It is still quite widespread and locally common in some areas, but the rapidity of its decline is alarming. Of even greater concern is the status of the univoltine subspecies. The sad story of the British subspecies is well known, but the status of the Dutch subspecies *L. d. batavus* is now a cause of great concern. This is the only surviving univoltine subspecies in north-west Europe and may be down to only one population.

I am currently working on the conservation of the species including its restoration in England. One of my concerns is the genetic diversity of the univoltine races. We have recently found that this is extremely low in the Woodwalton Fen captive population, and it would be inappropriate to use this for any recovery programme. This is to be expected given the amount of time this colony has been maintained. Indeed any colony that has been kept for a long period will probably have lost a substantial proportion of the genetic diversity that is so important for survival in the natural environment. The remnant population left in the Netherlands may also be at risk of loss of diversity which would probably be the point of no return for the subspecies.

However, there is one thing we can do. Luckily, this species is relatively easy to breed in captivity and there are quite a few people around the country who do so, many of which are probably members. If you have a colony of *batavus*, it may have lost much of its genetic diversity, but what remains will not necessarily be the same as in the next person's colony. Therefore, all colonies combined may have a substantially higher genetic diversity. This could be vitally important for the species conservation and restoration.

I would like to appeal to everyone who has a colony and is willing to donate some of their stock, to get in touch with me as soon as possible. I want to get a genetic profile of each population and start a captive breeding programme to maximise genetic diversity.

Many of the colonies may have come from one source (a commercial dealer for example) but this does not mean that they will all be genetically identical. I would like to hear from everybody.

Editors note:

Andrew may be contacted at the above address or by phone on (0782) 583026 (day), (0270) 820142 (evening) or by fax (0782) 630007.

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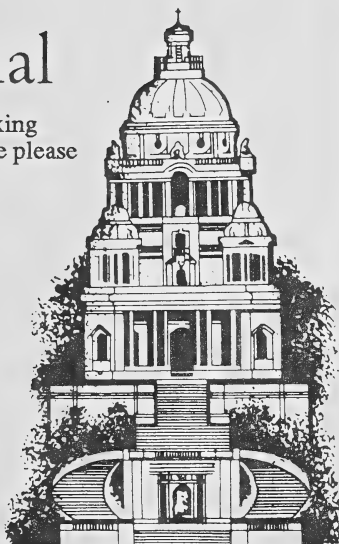
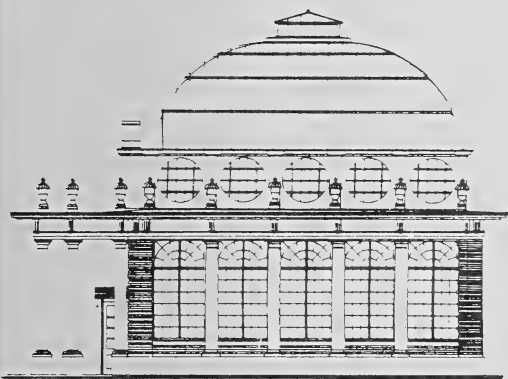
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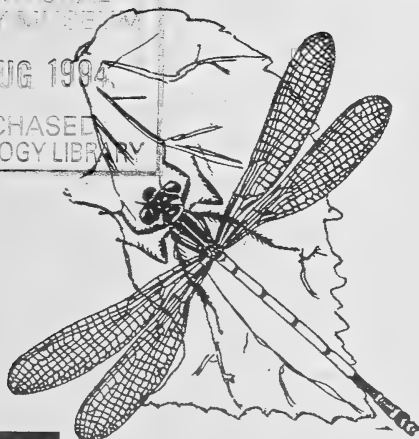
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Volume 53, No. 395, August, 1994

The Bulletin of the Amateur Entomologists' Society

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WAYNE JARVIS BSc.

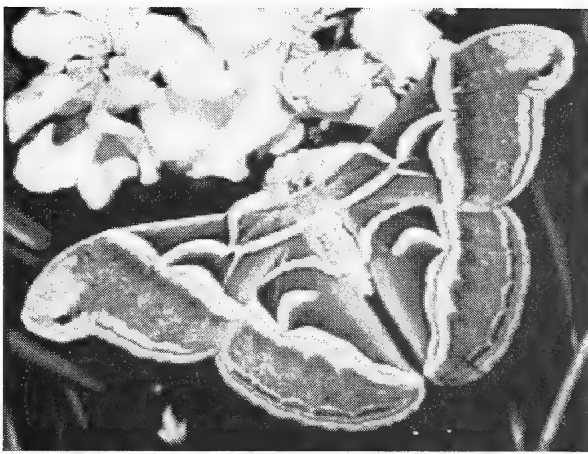
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Founded in 1935

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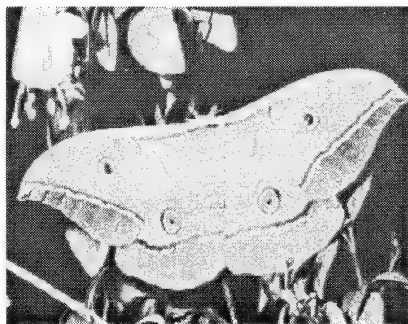
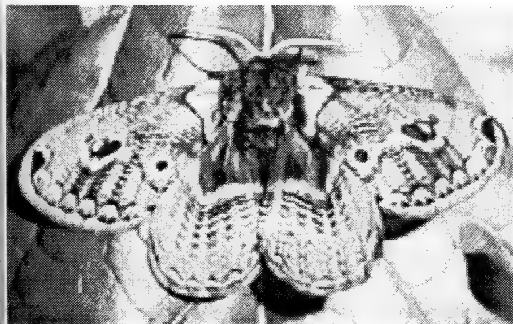
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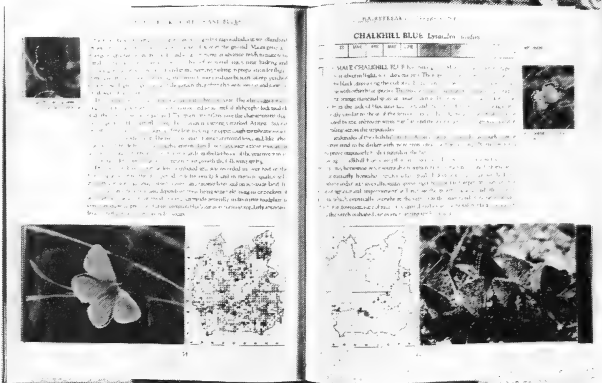
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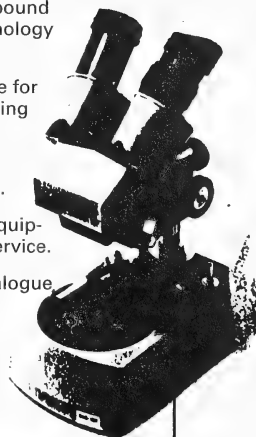
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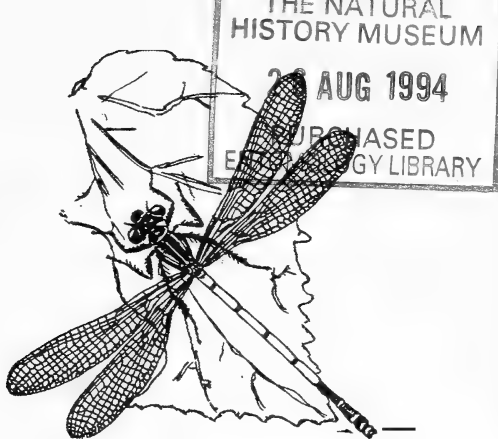
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AES BULLETIN

No. 395



EDITORIAL

This issue of the *Bulletin* contains the Society's Report for 1993 as well as the 1993 Exhibition report. It will soon be time, for the exhibition, which this year takes place at Kempton Park racecourse on Saturday 8th October, starting at 11.00am. Transport details *etc.* may be found elsewhere in the *Bulletin*.

The more astute members may have noticed that I have recently moved, and therefore articles should now be sent to me at 9a Brook Street, Luton, Bedfordshire LU3 1DS. However, do not panic if you've sent any articles to my Lincolnshire address as they will be forwarded to me.

Finally, just a quick thank you to all members who have wished me well in my rôle as editor, it is very much appreciated!

Wayne Jarvis

THE AMATEUR ENTOMOLOGISTS' SOCIETY



ANNUAL REPORTS FOR 1993 OF THE SOCIETY AND ITS ASSOCIATED BODIES

OF THE COUNCIL

The membership of the Society at the end of 1993 totalled 1973. This comprised 9 Honorary, 60 Life, 25 Associate, 10 Exchange, 1664 Ordinary, 96 Junior and 109 Overseas members in the various categories. Levels of membership are fairly stable at present. However, only 1559 members have so far paid their subscription for 1994.

This year has seen some upheaval in the administration of the Society and we owe much gratitude to Katie Taylor and to Mark Colvin for their efforts as successive Registrars. Mark, in particular, has put a lot of work into implementing a computerised membership database which has eased the task of serving members and chasing subscriptions, and will make the job easier in future.

The Council met on four occasions during the year at the London Ecology Centre, and Westminster Central Hall. Paul Sokoloff was elected as a Trustee of the Society. He and our other trustee, Roy McCormick, have an important rôle and we are grateful that they have taken on the responsibilities. This year has seen some changes in Council, with the welcome addition of several new and younger faces in the team, who are set to take on important roles in the Society in 1994. However, the whole Society was deeply saddened by the death during the year of Peter Cribb, former President, Bulletin Editor, Chairman of the Conservation Committee, prolific writer and true enthusiast and leader in insect conservation.

The Annual Exhibition, which was held at Kempton Park Racecourse, was again a great success, and we thank Roy McCormick for his tireless efforts in providing once again an opportunity for members to share their interests and enthusiasm. Six issues of the *Bulletin* were published and the Editor, Brian Gardiner, is to be congratulated on its continuing high quality. New publications in 1993 include the second edition of *A Directory For Entomologists* edited by Mark Colvin and Duncan Reavey.

Council feels that the Society continues to thrive, due in no small part to the efforts of a large number of members, in Council and outside. Council would be delighted to hear from Members who would like to become more closely involved in running the Society.

Simon Fraser
Hon. Secretary

OF THE TREASURER

As predicted the year ending 31st December 1993 was a difficult year for the Society financially because of falling interest rates and the cost of reprinting the *Directory for Entomologists*, which was issued free to all members. Income was down by £553 to £20,771 and expenditure up by £2,316 to £26,058. In consequence the deficit increased to £5,287 from £2,316 in 1992. Your Council therefore had no alternative but to increase subscriptions for 1994 – the first increase for five years. Despite the increase the cost of membership is still lower than comparable Societies and still less than the cost of printing and posting six *Bulletins* per year.

On the publications front, with no new publications in 1993, gross sales values fell from £13,920 to £9,605 and the trading surplus from £2,989 to £1,943. At least two new publications are planned for the current year, one on

Moth traps and the other a reprint of *Practical Hints for the Field Lepidopterist* by J.W. Tutt (with an additional index cross referencing old and new names).

R.A. Fry
Hon. Treasurer

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1993

EXPENDITURE			INCOME		
1992		1993	1992		1993
£		£ £	£		£ £
Bulletin Costs:			Subscriptions:		
433	Editorial	464	11050	Ordinary & Affiliate	11157
12108	Printing	12445	384	Junior	388
5220	Despatch	6057	344	Life Membership Fund	388
133	Indices	145			
		19111	1523	Donations:	11907
					1336
Membership Services:			487	Enrolment Fees:	393
-	Directory for Entomologists	1726			
1057	Membership List	382			
309	Wants/Exchange Lists	303			
		2411			
Administration Etc:					
605	Stationery & Notices	726	2462	Investment Income (Gross):	
252	Postage & Carriage	536		National Savings and	
1325	Registrar's Fees	1275		Midland Bank Account	1431
691	Meetings Expenses	1014			
437	Depreciation	350	2208	Other Income (Net):	
415	Insurance	487		Advertising Revenue	2285
342	Sundry Expenses	16	660	Annual Exhibition	833
		4404	63	Badges	61
					3179
142	Conservation:	132			
23469		26058	1972	Hammond Fund subsidy for Bulletin	2525
			21153	colour plates:	20771
			2316	Deficit to Hammond/Crow Fund:	5287
23469		26058	23469		26058

PUBLICATIONS TRADING ACCOUNT FOR THE YEAR ENDED 31st DECEMBER 1993

EXPENDITURE			INCOME		
1992		1993	1992		1993
£		£ £	£		£ £
New and Revised Publications Costs:			13920	Sales (Gross):	9605
125	Editorial etc.	282			
5137	Printing	80		- Increase in value of stocks:	-
101	Decrease in value of stocks:	3458			
5568	Selling and other expenses:	3842			
2989	Trading surplus to Publications Fund:	1943			
13920		9605	13920		9605

R.A. Fry, Dip.E.E., C.Eng., M.I.E.E.
Hon. Treasurer.

The Report of the Auditors to the Members of the Amateur Entomologists' Society

We have examined the records of the Amateur Entomologists' Society and, in our opinion, the Balance Sheet gives a true and fair view of the state of affairs on 31st December 1993 and of the Income and Expenditure for the year ended on that date.

A.J. PICKLES, F.C.A.

**AMATEUR ENTOMOLOGISTS' SOCIETY
BALANCE SHEET AS AT 31st DECEMBER 1993**

1992		1993		1992		1993	
£		£	£	£		£	£
General Fund:				Fixed Assets:			
28267	Balance at 1st January 1993	28267		4212	Office Equipment at cost	4213	
-	Add: Surplus income (deficit) for year	-		2464	Less: Total depreciation	2814	
		28267		1749			1399
Life Membership Fund:				Investments at cost:			
6514	Balance at 1st January 1993	6905		660	£712 Treas. 12.75% 1995	660	
391	Add: Surplus income (deficit) for year	751		1260	£1470 Treas. 9.5% 1999	1260	
		7656		150	109 M&G Charifund Income Units	150	
Ansonge Award Fund:				117182	NSB and Midland Bank Investment accounts	113436	
325	Balance at 1st January 1993	347					115506
22	Add: Surplus income (deficit) for year	15					
		362		Current Assets:			
Crow & Hammond Trust Fund:				198	Stock at cost	143	
81632	Balance at 1st January 1993	83422		1121	Sundry debtors	825	
1791	Add: Surplus income (deficit) for year	(3746)		1583	Cash at Bank Current Account	4090	
		79676		50	Cash in Hand	50	
Creditors:							5108
4026	Advance Subscriptions	5487					
591	Advance Donations	515					
394	Other	50					
		6052					
123953		122013		123953			122013

PUBLICATIONS FUND AT 31st DECEMBER 1993

1992		1993		1992		1993	
£		£	£	£		£	£
51125	Balance at 1st January 1993	55627			Investments:		
2990	Add: Trading Surplus for the year	1943			NSB and Midland Bank Investment accounts		31258
1512	Interest - NSB and Midland Savings Accounts	1040		20536			
55627		58610			Current Assets:		
6068	Creditors:	4342		26191	Stocks at lower of cost or valuation	22733	
				13545	Sundry Debtors	7014	
				1423	Cash at Bank	1947	
							31694
61695		62952		61695			62952

**OF THE CONSERVATION COMMITTEE AND OF THE SOCIETY'S
REPRESENTATIVES ON THE JOINT COMMITTEE FOR THE
CONSERVATION OF BRITISH INVERTEBRATES**

The events of 1993 were overshadowed by the failed attempts of the JCCBI to secure long-term funding for the post of Conservation Officer, which had been supported for three years by the World Wide Fund for Nature. The Councils of some of the JCCBI's constituent societies, including the AES, offered short-term funds to maintain the post until the autumn, but these were not required thanks to the voluntary assistance of Helen Smith, the outgoing Conservation Officer. Although there was still no good news by the end of 1993, we have since heard that the Royal Entomological Society has agreed to come to the rescue with secretarial assistance which will enable the JCCBI to continue as a forum for discussion.

One of the JCCBI's main achievements during the year was the publication of its guide for invertebrate surveys, which appeared as an article in the

magazine *British Wildlife*. The other two JCCBI documents mentioned in earlier annual reports have not fared so well. The statement on the rôle of legislation in protecting invertebrates was finalised but remains to be published. The guidelines on the payment of field survey workers have been withdrawn for the time being because the views of different organisations seem to be irreconcilable. In its consultative rôle, the JCCBI has advised English Nature on its Species Recovery Programme, and some of its members were also invited to comment on the selection of insect species for the annexes of the European Union's Habitats Directive.

While waiting for news of the JCCBI's fate, our Society has re-activated its Conservation Committee, whose Chairman Peter Cribb sadly died during the year. Our Committee's immediate aims are: (1) to bring *Insect Conservation News* back into production under the name *Invertebrate Conservation News*; (2) to put into action our scheme to establish a network of local conservation representatives and (3) to publish a second edition of the Society's conservation handbook. Amongst the new members of our Committee are Darren Mann, who has joined David Lonsdale in representing the Society on JCCBI, and Martin Harvey who has taken over from Clive Betts as our Habitat Conservation Officer.

As usual, we have made representations on a number of issues and on local conservation matters. In the south of England, we surveyed a glow-worm site on behalf of the Hampshire and Isle of Wight Wildlife Trust, and we have also been involved in discussions about the late Peter Cribb's plan to re-introduce the Marsh fritillary to the island. Further north, the enlightened approach of Oxford City Council to invertebrate conservation has been very encouraging, and we will be responding to their request for advice. Through the JCCBI, we have also been involved in representations to help protect the Burren in the Irish Republic from over-development and to appeal (unsuccessfully) for the retention of certain deadwood habitats at Windsor Great Park. We have also written to the editors of publications on more general matters such as roadside verge cutting and the rights and wrongs of the trade in tropical insects.

The difficulties faced by the JCCBI have highlighted some important questions that all invertebrate conservationists need to address. The JCCBI and its member bodies have made a lot of headway in the battle to make more people aware of the importance of invertebrates in conservation. In Britain, this is reflected in the activities of the county trusts, of the statutory conservation bodies and of other national organisations, including the National Trust and the Royal Society for the Protection of Birds. We have also seen the rise of an organisation, Butterfly Conservation, which concentrates on the conservation of the larger Lepidoptera.

Despite these achievements, much still needs to be done to avert habitat destruction, which continues to threaten some species with extinction and has greatly reduced the abundance of many others. Thus we still need an

organisation which is dedicated to invertebrate conservation, although we have to ask what form it should take. In the past, the rather nebulous hope has been that the JCCBI could marshal the work of its constituent societies, thus obviating the need for a new invertebrate conservation society. In reality, it may be that the JCCBI will have to function mainly as a talking-shop, in which case the AES will need to re-assess its own rôle in conservation.

David Lonsdale
JCCBI Representative

A FEATHERED RANUNCULUS ON BOARD!

by R.A. Eades (9730)

On the afternoon of the 2nd October 1993 I boarded a ship in Alexander Dock, Hull, called the "Arco Arun", in order to pilot this vessel down the Humber and out to sea. The ship is a large dredger, which extracts gravel from the bed of the North Sea, and occasionally calls at this port with aggregates for the building industry. She had arrived during the night and discharged her cargo of gravel. The weather was settled at the time, and the previous night had been humid and misty. In the wheelhouse I noticed a dead moth at the bottom of the bridge windows. As I could not identify it, I collected it, and showed it to Derek Cutts, who identified it as a Feathered ranunculus, *Eumichtis lichenea lichenea*. I took the specimen to Spurn Nature Reserve, where the warden, Barry Spence and his assistant David Boyle confirmed the identification. Presumably the moth flew on board during the inward voyage whilst the ship passed the end of Spurn Point, during the hours of darkness. At Spurn the species is a "common resident" (Spence 1991), and the date is within the dates given by him of "second week of September to the second week in October". Sutton and Beaumont 1989 describe it as a "mainly coastal species" which "is now spreading again in Yorkshire". The possibility also exists that the moth came on board in Hull docks, where there are still areas of derelict land with a very interesting weed flora (Crackles 1990). However, I think this unlikely, because the ship's wheelhouse is locked up in port, which would both prevent a moth flying in, and also prevent a moth trapped inside from leaving. Furthermore, with the rapid growth in trade since Alexander Dock was reopened last year a lot of interesting habitat has been lost to industry. The sighting is of interest in showing once again the possibility for insects to spread by human transport. I wish to thank Derek Cutts and Barry Spence for their help in identification and preparing this note.

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- Crackles, E. (1990). *Flora of the East Riding of Yorkshire*. Humberside County Council, Hull.
Spencer, B. (1991). *The Moths and Butterflies of Spurn*. Spurn Bird Observatory, Kilnsea. Humberside.
Sutton, S.L. and Beaumont, H.E. (1989). *Butterflies and Moths of Yorkshire*. Yorkshire Naturalists Union, Doncaster.

DE FUS' TIME IN TOBAGO

by Leigh Plester (2968)

Ylä-Muuratjärvi, 41800 Korpilahti, Finland.

(Continued from page 103)

By now, you should be well and truly inured to the quirks of the tropics. So if I say that in the same place on Tobago, on 14th May, I bumped into a couple of postmen, you'll know what I mean. These had long, narrow black wings, the front ones crossed by a brilliant red slash in true *Heliconius* fashion. Among the islands of the eastern Caribbean, the Postman (*H. melpomene*) is common only on Trinidad and Tobago, where it inhabits shady places like the Grafton Estate.

Already the days were gone when magnificent yellow creepers hung with thousands of close-set flowers spilling out the most mind-reeling scent bloomed wild by the roadside near the Grafton. Yellow pouis had also shed their petals and the jacarandas outside the Turtle Beach hotel were beginning to sprinkle the lawn with purple confetti. Crimson-flowered flamboyants, or poincianas, whose ancestors had been imported from Africa in the 18th century, still dazzled the eye on the world-famous golf course, withered thirty centimetre pods hanging down among their green fronds. Arnos Vale Trace had seen me without a Bolex and had later accepted my presence for hours on end as I filmed southern mocking birds at their nest, butterfly-eating rufous-tailed jacmars, and humming birds. By 9th May there was a sprinkling of red-flowered lent lilies (*Amaryllis*) growing incongruously on a dried hillside among the scrub, and I was lucky enough to get my first shots of a ruby-topaz hummingbird buzzing for a few seconds around a lantana bush. Termite nests the size of footballs festooned trees big enough to bear their weight, the occupants having built tunnels to protect themselves from the hot sunlight.

There were a number of tall thin bushes whose branches were adorned with closely-set creamy flowers emitting a caramel-like scent. A lizard at least thirty centimetres long suddenly materialised high up in one of these bushes; it had pale underparts, and a green back with black diamond shaped marks. It also had a determined jaw like that of my Victorian grandfather who used to pull his rotten teeth out with pliers. The lizard's manifestation occurred about five seconds before a Heavenly moth (*Urania leilus*) reached the bush, having flapped right across an open area at a height that rendered carrying a kite net a fool's occupation. I watched, stone rigid, as the moth landed on a flower and began to probe into its depths. The lizard moved just once, as though performing a judo throw, and then the Heavenly moth appeared to sprout afresh from either side of the reptile's jaws. Clinging to its branch, the lithe predator seemed to pause for breath. I had a sudden notion that it would open its jaws and clamp them down heavily on the moth's body, allowing the black and metallic green wings to flutter to earth, a collector's item to show

my grandchildren. Yet, after a decent interval, with a series of violent chomps the reptile folded the moth's wings inwards in stages until, with a final convulsive gulp, it swallowed the insect whole. The brats will just nod and grin knowingly behind grandpa's back.

There may be those among you who have skipped pages since my admission that I'd acquired a sultry slave. At the risk of seeming a chauvinist (which I'm not), I must say that Synette really was very beautiful in the true "eyelond" tradition, with liquid brown eyes, finely sculptured lips, and a figure to match. She also had a husband, old knuckle-crushing Rodney (who like many Tobagans was out of work) and a pair of lovely children. On the other hand, down on the beach that Old Oak rum was certainly proving strong stuff. When Synette asked for money for my packed lunch on the morrow, I done give it – gave it – to her. "I goin' come fetch youse termorrer," mumbled I, now well into the spirit of the West Indies. "Youse can carry my cameras, tripod and kite net, recharge de killing bottle, re-film de camera, look for de bugs, catch fluts, write up my notes (in triplicate) for de AES, and if you have any time over, recondition de jeep engine, dat one is on its last legs". She nodded in obedience, although she must have considered me a basket case, and then, as though the effort were too much for her, she seemed to go to sleep on her feet. I crawled back to the Grafton with Tuomo and Jyrki, wondering what I'd let myself in for.

Arnos Vale was the first place master and slave headed for, time having already borne its sons, and daughters, to the 23rd May. The jeep climbed up and along an ever-narrowing cart track, encouraged perhaps by the sporadic glimpses of tyre marks, and once of an abandoned vehicle, its owner apparently a couple of hundred metres below busily divesting the Caribbean of some of its fish. We passed through scrub interspersed with strange palms that had cast their date-like fruit on to the ground. Tasting like toffee, these prevented me from issuing instructions to Synette through stuck teeth and were thus unilaterally discarded. For those who regardless would have given their right arm and all that, I might say there was a considerable confusion owing to the fact that Synette had a thick "eyelond" accent, making it necessary to reply "Yes" to everything she said because de boss hadn't a clue what she was saying.

Lizards scuttled over the baked earth when we stopped, or ran, two-legged, in front of the jeep as the driver cruelly put on speed. There were more butterflies than there usually were way down below at sea level. The faded-looking St Lucia mestra was rather common, as was the Tropical chequered skipper; a Red rim pottered anxiously about as though (pun) on the rim of a hot volcano. I netted a small nymphalid that I had seen up near Mason Hall as well. This has a distinctly South American appearance but I have been unable to identify it, again because of limitations posed by my book. The upperside is virtually black and white, that is it has a broad black border around a snow

white centre. Near the forewing front margin there is a prominent white blotch. Underneath, the wide wing margins are more complicated, being brownish overlaid with white blotches as though some Sunday artist had painted a butterfly with artistic licence. Once again, the inside area of both wings is white. The butterfly, which has the wing shape of a "typical" nymphalid, is surprisingly small, its forewing spanning only about fourteen centimetres.

Eventually the track narrowed so much I felt that, even in the minuscule Suzuki, we could go no further. I piled out, clutching net and pill boxes while Synette, leaning against the passenger side door, appeared to be preparing for a siesta. By now I was used to the fact that when all action ceased on my part she'd just gaze at me with those liquid brown eyes like a faithful spaniel, saying less than the Chancellor before a budget. I'd only gone a few yards, however, before I heard footfalls behind me and a brown hand protruded past. I stared in astonishment: she had relieved me of some of my pill boxes! I began to feel that all was turning out rather well once we'd gone through a minor episode in which a winged creature sailed forth over a precipice when I opened a box she had handed to me thirty seconds previously in a loose situation. To avoid a similar occurrence I dosed the killing bottle with ethyl acetate, so that she could judge for herself when an insect had been stunned into immobility and the lid could be safely removed.

We stopped in an area of steeply sloping secondary rain forest, cool after the open track. Below us, in the shade of the well-spaced trees, some small yellow butterflies were flitting about which I felt required further investigation. As the undergrowth consisted of some innocent-looking, if rather tall, grass, I grabbed a handy tree branch and flipped myself over the edge. Tales of snakes in the tropics have never particularly bothered me, mainly because I feel that a snake with A-1 dentition can go through thin cloth just as surely as it can through skin so I tend to wear shorts. I had gathered a fair netful of small "sulphurs" before I became aware that someone had lit a fire under my bare knees and that the conflagration was growing by the instant. I looked down: there was nothing except the innocuous 60cm high grass with its broad blades. I looked up: Synette was standing gazing placidly down at me on the brink, or so it seemed, of a mid-day snooze. I looked down again and then back up. My head was becoming a yo-yo. "I think there's something funny with this blankety-blank-blank grass!" I shouted. "Yes," she said calmly, "dat one stings". It was only the sloping terrain and the multi-fanged undergrowth that saved her husband from becoming a widower at twenty.

If I'd considered the day's danger at a peak, I was wrong. Upon arriving at the jeep, I realised there was nowhere to turn round and so did the only thing possible: I went on – until, that is, the track narrowed even further and we became a cork in a bottle, a high bank on the right, a sheer drop through scrub on the left. There was nought to do but go back. However, going forward along a narrow track is one thing, reversing is another. "Watch the edge," I

commanded as I inched back. "You're close," she said, so I got out and reviewed the situation. There was half a runway between the jeep and the drop; on my side the wheels were already climbing up the hill. She drooped in her seat like a punctured balloon. I tried again, with the same result and report. Then I had to circumnavigate a sharp bend, after which I couldn't even see the track from where I was sitting.

I prised myself out of the jeep. The nearside wheels were right on the edge, nothing between us and a hundred metre jungle plummet except a bit of baked ground. A contortionist, I tapped fearfully on the window which she opened. "We're right on the brink!" I informed her. She stared at me with her hang-dog Spaniel eyes. "I done tol' youse already," she reminded me. Suddenly her take-life-as-it-comes attitude nettled me. "If dis ting go over de edge, you're ain't goin' nid no coffin. You're already in a Sunny Jeeps Special!" I bawled. Unmoved by my outburst, she stared nonchalantly out of the window as I inched the jeep back expecting at any moment to feel the initial shudder as the baked earth gave way and we embarked on our jungle plummet. We covered about a hundred yards of track before I found a place at which it was barely possible to perform a three-hundred point turn. I breathed out in relief. She simply gazed at me with those soulful eyes and I thought, so what, she'll probably realise the danger by Christmas. "W'ud y'u like som' o' dis corncake I done mek?" she asked.

Time went by and life on Tobago continued, even though it often seemed to me I was the fastest thing on two legs throughout the island. Nick's wife and offspring left and the day of my own departure began to creep ominously near. I made arrangements to visit Little Tobago Island, just off Speyside on the Windward Road, and when I got there part of the general village scenery bounded without warning into the middle of the road. I screeched to a halt. The figure that stood before me was wearing what amounted to a loincloth and size 47 sandals. Zulu, I opinioned to a tee. It produced a large hand, which I shook. "I'm Paul," said the apparition, "so if you'd like to drive up dat road dere to where Spencer is waiting, we'll go over to Little Tobago." As I engaged gear, the front of the vehicle rose by about half a metre; Paul had nonchalantly hopped on the back bumper.

Spencer ferrying us over to the island, we carted our stuff across the shingle to the base camp of Tobago's Mount Everest. A long path snaked up its side, shaded by some of the last vestiges of virgin rain forest in the entire West Indies. I've always considered that nature conservation should take into account the needs of local inhabitants, by for instance training them as guides. Apparently Paul had anticipated this adoption of a Plesterism by training himself. We hadn't gone far up the steep path before we spotted a chestnut-coloured snake. Paul thrust out a brown arm that quivered from pit to rigid finger. "Now dat one dere, dat one we call de mango snake," he reported in booming tones. I made a move towards my camera case. "Right, squire. . ."

Before I could stop him, and presumably to underscore this dramatic zoological statement, my local guide lurched forward and, bringing up his knee, brought one of his Zulu beetle-crushers down flat on the snake's tail. It is rumoured that the BBC, while trying to film the flying snake in Borneo, took the beast up in a hot air balloon and released it from one thousand feet. What a waste of time and effort. "Call for Paul!" would have been my motto.

Pauls earth-bound mango snake reacted as though subjected to a couple of thousand volts. Launching itself into space over a hollow, it spanned several yards in a graceful arc before coming down, a writhing mass of spaghetti, among the dried leaves. "Ye-es, dat one de mango snake," repeated Paul, in case I'd missed the fact. "Sorry I was a bit slow getting de camera out," I apologised drily.

We clambered round a few more curves in the track before Paul suddenly put down the heavy aluminium camera case he had been carrying on his shoulder and gave vent to a sharp exclamation. It is possible that my guide's face had gone a shade paler, though it was difficult to tell. Setting down my tripod and leather camera case I looked up in time to see another islander – obviously the object of Paul's wrath – shepherding two Europeans down the narrow track. The Europeans turned out to be Dutch, and their guide was called Alexander – a fact I gleaned from the dialogue passing between him and Paul, which quickly developed into a full-scale verbal war. Minus the procreative expletives, sanguineousness, and references to various perverted sexual acts, the gist of the "conversation" was that Alexander was more qualified to lead a brace of baboons than he was tourists, and that he should have asked the Dutch couple to wait until Paul's return.

It was at this dramatic moment that a pair of large lizards, possibly impressed by the West Indian Waterloo going on around them, chose to embark on a territory dispute. Locked together, huge jaws snapping but doing little damage to the thick scaly skin, they rolled over and over for about twenty metres down the track, tails intertwined and claws scratching, finally coming to rest – where else but on top of my camera case? I sighed. Here I was witnessing lizard behaviour at its most exciting and there they were literally keeping the lid on any move I dared to make to record the fact. The lizards lay still on the hot leather for some minutes before one abruptly disentangled itself and they shot off to continue their tussle elsewhere.

By now Paul had calmed down and we were able to climb right to the top of the island and through the strange forest with its giant anthurium plants standing over a metre high on the ground or up in the branches of the low growing West Indian rain forest trees. Cackling red-billed tropic bird chicks in the vegetation fringing the cliffs were duly filmed, as well as an adult that landed "on stage", for once as though by appointment, a few feet in front of the camera. The adult was fully a metre long, half of its length being taken

up, however, by a serpentine tail. Its thick, bright red beak was in vivid contrast to its white feathers and slight mottling of black. "Leigh," asked Paul during a lull in the action, "have you got the water bottle?" I realised with dismay that I hadn't and it was two thirsty people whom Spencer picked up three hours later, for there is no fresh water on the island, where the sun beats down and a constant dry wind gusts steadily from off the Atlantic.

Later, with about a pint of water inside each of us, we were loading my equipment back into the jeep when Paul noticed my emergency stock of bottles of Carib beer. Impulsive as always, my guide wrapped his hands around them and bore them away, shouting "I'll put these in the shop fridge to cool them down." I never saw them again, but I did see Paul – in December. Inevitably my wife and five year-old daughter were thoroughly besotted by our "Zulu guide"!

A "drop" is a Tobagan term for a hitch-hiker, who can be virtually anybody on the island, especially on Sundays when the buses, rare at the best of times, are not running. These "drops" stand in an orderly queue, generally in a village or at an actual bus stop and it is the height of bad manners, if you have space in your vehicle, not to stop for them. Going back down the island I picked up a man who had had four wives, all of whom had divorced him. Rounding a bend, we found ourselves facing a young lady quite obviously in the last stages of pregnancy. "Your fifth wife!" I said, as she raised her hand. "Please don't stop," he implored me, "I've already told you four is enough for any man."

We finally reached his destination, where he remained for a moment with the jeep door open. A question was obviously plaguing him and he finally got it out: "Dis your fus' time in Tobago, boy?" I admitted it was. He held out a brown hand. "Den I hope it not like my fourth wife – de las' time!" I waved weavily as I drove off. Heaven forbid, thought I, that I should ever have to write up "De las' time in Tobago"!

MYSTERY FROTH

By Sarah Bence

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Setting forth across the fields one dawn in March this year I came across several lines of froth lying on top of wheat stubble. It attracted my attention because each line of froth came out of the verge of the field border ditch at right angles and trailed across the field centre in an exact straight line for up to 100 metres. The line was broken in a few places. The land is agricultural, the soil quite wet, and unmanaged grass and bramble dominate the ditches. I know no agricultural spraying was done on the field the previous day or that morning, so what could the lines of froth be? Is it some kind of caterpillar or cuckoo spit or what? Does anyone know?

(Editor's note: Could possibly be *Myxomycotina* [Slime mould]).

ORNITHOPTERA 'ALLOTTEI', A NATURAL HYBRID OF *O. VICTORIAE* AND *O. PRIAMUS URVILLIANUS*

by Anthony Darby (5860)

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Shortly before his death in 1987, Ray Straatman sent some photographs of hybrids he had bred, including the one enclosed of a cross between a female *Ornithoptera victoriae* and a male *Ornithoptera priamus euphorion* which proved once and for all that *O. "allotiei"* was a hybrid between *O. victoriae* and *O. priamus urvillianus* – the form of *priamus* found in the Solomon Islands.

Until the publication of the excellent monograph on the Birdwing butterflies (Haugum & Low, 1978), it was generally accepted that *Ornithoptera "allotiei"* was a good species (D'Abrera, 1975). Schmid (1970) placed it intermediate between *victoriae* and *priamus*, but representing "a more primitive condition". He placed it as a branch of the phyletic tree between *alexandrae* and *victoriae*. Straatman, in 1986, successfully bred *victoriae/priamus* hybrids. This confirmed the view that *Ornithoptera "allotiei"* Rothschild (1914) was a rare natural hybrid between *O. priamus urvillianus* and *O. victoriae* (Haugum & Low, 1978). The photographs of a hybrid between a male *O. priamus euphorion* and a female *O. victoriae* were the final proof (Plate WW Fig. 1). Observations of natural copulations in the field have been made, and indeed, in 1976 Straatman did manage to obtain fertile ova from a semi-natural pairing. The resulting larvae were unfortunately eaten by a predator (Haugum, 1990). This incident is recorded in Bernard D'Abrera's book *Birdwing Butterflies of the World* "... a well known collector-breeder successfully crossed *O. v. regis* with *O. urvilliana* to the point of having several well advanced larvae. When asked what had happened to these his reply was that 'frogs got into the cage and ate them'. What a tragedy for science that the frogs were not identified. The whole episode could have been the basis for a most illuminating paper." D'Abrera believed that "*allotiei*" was a good species (D'Abrera, 1975), but then he had described *urvilliana (urvillianus)* as a good species (see below).

The specimens in the photos were bred by Straatman on a small island off Singapore in 1986 (Straatman, pers. com.) from pupae brought to him by a Japanese collector. Cool conditions did not favour pairing male *urvillianus* with female *victoriae*, so male *euphorion* were used (Haugum, 1990; Straatman, pers. com.). The following is a quote from Straatman's letter: the spelling is his (Straatman, pers. com., 23rd October 1986). "I enclose a few fotos made of, what is still officially called *O. 'allotei'* [sic], which is, in fact a hybrid between *O. victoriae* female and *O. priamus* male. The specimens known from Solomon Islands, having a blue male parent (*urvilleana* [sic]) are

bluish of course. In this case however the male parent was *O. p. euphorion* and resulting 'allotei' [sic] – hybrids (five specimens, two females; three males) are beautifully golden. Crossing is no problem at all. Just release female *victoriae* in greenhouse together with male *priamus* and they mate spontaneously." Unfortunately Straatman was unable to publish his results and died after a short illness on 3rd April 1987.

Straatman did various hybridisation experiments, including crossing *O. priamus poseidon* with *O. p. urvillianus*. Subsequent generations had no loss of fertility, thus providing evidence that *urvillianus* is not a distinct species (Ray Straatman, pers. com.). He even managed to successfully cross a male *Troides oblongomaculatus papuensis* with a female *O. p. poseidon*, demonstrating the close links between *Ornithoptera* and *Troides* (Straatman, 1976). Another successful hybrid was *Ornithoptera* "urvidion" (Plate WW Fig. 2) which was the result of the mating between the female *Ornithoptera priamus urvillianus* and the male *O. p. euphorion*. The full story of the crossing of *O. victoriae* with *O. p. euphorion* may never be known (Haugum, 1990), but it must have been a tremendous coup. What a pity this great lepidopterist was unable to publish his findings.

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EXCITING OPPORTUNITY FOR MEMBERS IN CLEVELAND, SOUTH DURHAM AND NORTH YORKSHIRE

by D.W. Lacey (8872)

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I am writing on behalf of ICI and British Gas to invite members in the above areas to participate in the creation of an exciting butterfly feature at the Botanic Centre, Acklam, Middlesbrough.

Funding for this venture has been provided by these two companies. What is needed now is the enthusiasm of members to build and maintain an enclosure within which it is intended to encourage breeding of several species.

Hopefully, the enclosure will serve as a nursery from which quantities of local species can be bred and released each year. The ultimate scope of this idea is limited only by the imagination and dedication of those involved. If you are interested, please write to me at the above address.

RHINOS IN MAMMOTH-LAND

by Leigh Plester (2968)

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I was much amused by Chris Bett's reference to finding a "rhino" in his bath (*Bulletin* 52: 227-8) and I trust I may take the liberty of enlarging a little on his statement regarding *Oryctes nasicornis* (the European rhinoceros beetle) being "a native of southern Europe".

In *Suuri Hyönteiskirja* (The Great Book of Insects, 1966), based on the Swedish tome *The Insects* (1957), Kontuniemi gives the following information (here abridged and paraphrased) on *Oryctes nasicornis* in Finland. Beetle books published at the end of the last century mention rhinoceros beetles and their larvae being found in piles of leather waste outside leather factories. Since then this kind of waste has disappeared and the species has been obliged to look elsewhere for breeding sites. In the event, piles of sawdust, compost heaps, and heated greenhouses have provided new homes for it. Since the species is today dependent upon mankind, one may ask how it could have survived before the advent of leather factories and greenhouses. Years ago in Europe there would have been, for example, rotting oak trees which these days are rigorously removed from commercial forests; undoubtedly *O. nasicornis* used to breed in these. Thus, in contrast to many other species, *O. nasicornis* has been able to adapt to changing conditions and not only to survive, but even to increase its range. Being capable of only very limited, clumsy flight, it is likely that the beetles were distributed by rail in sawdust and refuse, and even by ship. Most of Finland's *O. nasicornis* population was wiped out by the severe winters during the Second World War period. In 1944, the arrival once again of trading ships from foreign parts brought a new influx of rhinoceros beetles to Finnish harbours. Their descendants, taking two or three years to reach the adult stage, rapidly began to spread and become common throughout the country.

Kontuniemi includes a map showing the spread of the species from 1914 to 1963. In 1914 the species occurred at St Petersburg (as it then was, and now, is). By 1940 it was on the south coast of Finland just above 60°N and by 1950 had radiated out in several directions. By 1960 it had established itself in Central Finland (where I now live) at above latitude 62°N

On a warm night in south-east Finland (approx. 61° 31'N) in August 1968 I stopped my car for some reason or another and as my passenger stood in the middle of the road a female *Oryctes nasicornis* flew straight into her legs! In 1970 my oldest Finnish friend, photographer Pentti Forsman, handed me a dried specimen of the species in a 35mm Kodak film container. Some 15 years later Pentti, suitably pickled in the manner of a well-to-do Egyptian, stumbled into the path of a car (I forget which make) and deprived me of one

of life's most colourful characters. But I still have the specimen in its "sarcophagus" – who remembers the old aluminium film containers painted in bright Kodak yellow?

The years went by and, fighting a losing battle against congenital idiocy, I took up wildlife filming. I also moved to Central Finland (62°N). From 1988 to 1991 I was casting desperately around for interesting subjects to include in a film about beetles. One evening a friend of mine popped round and, much as one would present a box of chocolates, gracefully handed me a carton of horse manure at the bottom of which several large white grubs with shiny brown heads were squirming. They were larvae of *Oryctes nasicornis* and he had had them delivered, albeit unwittingly, in a load of manure for his garden. I lost no time in contacting the owner of the stables and in filming a horse, a heap of manure and two sparrows, who happened to be sitting on a wire fence viewing the proceeding, made a good "cut-away" shot. A white wagtail picking its way delicately over a fly-ridden heap of dung and straw served to round off what could have proved a most unsavoury sequence if TV could transmit smell as well as sight and sound.

May 1993 found me in the most westerly part of Sarawak, the Malaysian part of Borneo, filming "A worm in the chilli". Like most inspired film directors I paid a farmer to have a coconut palm chopped down in front of the whirring camera. This was not so much western vandalism as a case of "I've got a lovely bunch of crown rot" (I refer to the tree, but take your pick). Rhino beetle larvae had burrowed into, and eaten, the tree's crown, ruining the future fronds and coconuts.

Our agricultural guide Chin obligingly did the chopping. Soon a jungle rat leaped out, leaving two pink, blind babies which we covered up against the sun. A spliced scorpion was the next victim. Then came a centipede the size of a cigar but decidedly more active. Its fangs appeared lethal and were certainly poisonous. After about half an hour a South-east Asian rhino beetle larva (*Oryctes rhinoceros*) was hacked out of the trunk. It was in two parts connected by a substance resembling school semolina and about as appetising, having been split through by Chin's axe. Even modern filming techniques could not have made the insect photogenic. There being no further inmates, we gave up, paid the farmer his 30 Ringgit (about £8.00), and departed.

As the Sarawak department of agriculture was unable to come up with any more *Oryctes rhinoceros* larvae by post, I had to use some of my old footage on *O. nasicornis* larvae, explaining that the South-east Asian rhino beetle looks "something like this". Doubtless to the audience, asleep by now, all rhino beetle larvae will look the same, but it is funny how things tend to "come together".

BUTTERFLIES OF SWITZERLAND, 1992 AND 1993.

by Tony Steele (4106)

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At the end of June 1992 I took my first holiday in Europe, to Switzerland. In the weeks prior to departure, several books were avidly read on the butterflies of Europe, so I knew approximately what species I could expect to see. My base was in Wengen, a mountain village to the south of Interlaken. (Plate XX Fig. 3). The village itself is situated on a plateau, 1300 metres (4260 ft) up on the side of a steep-sided glacial valley. Access was solely by a narrow gauge mountain railway.

The first couple of days were spent locally getting to know the area. I recorded several easily identified species like the Orange tip (*Anthocharis cardamines*), Wall (*Lasiommata megera*), Swallowtail (*Papilio machaon*), Painted lady (*Cynthia cardui*), Small tortoiseshell (*Aglais urticae*) and Wood white (*Leptidea sinapis*). The photograph of the Swallowtail (Plate XX Fig. 5) was taken at Kleine Scheidegg (Plate XX Fig.4) where I found the fresh-looking specimen with a crab spider firmly attached. It was clear that the butterfly had been dead for some time. So I carefully removed the spider and placed the butterfly on a neighbouring plant where I took the photo! The flower-rich meadows away from the village were literally alive with butterflies, and a problem presented itself. Although I had two good reference



Fig. 1. Oberberg Valley, Schynige Platte, Switzerland

books with me, there were many species that could not be identified, even when settled. This was especially so amongst the Satyrinae and Lycaenidae. There was only one solution, I needed a net and a couple of "pill" boxes, so I made a telephone call back home to England and the equipment was on its way.

Now I was able to net and identify some really interesting species like the alpine form of the Green-veined white, subspecies *bryoniae*. Other notables were the Dewy ringlet (*Erebia pandrose*), Shepherd's fritillary (*Boloria pales*), Peak white (*Pontia callidice*) and Large wall brown (*Lasiommata maera*). An afternoon stroll along the valley floor below Wengen saw, apart from the common species found in Britain, the False heath fritillary (*Melitaea diamina*), Black-veined white (*Aporia crataegi*) and Mazarine blue (*Cyaniris semiargus*). One fine day a trip was made to the highest railway station in Europe, Jungfrauoch at 345 metres (11,333 ft). On the permanent snow I observed a pair of Small tortoiseshells flying around and basking.

I met another AES member, Elizabeth Warren, who is an expert in the *Erebias*. A very enjoyable day was spent recording on the Hasliberg mountain near Meiringen. We started off at an altitude of 1708 metres (5600 ft) and walked through various habitats down to 600 metres (1900 ft). On this walk a total of 19 species were seen. This included the Large grizzled skipper (*Pyrgus alveus*), Sooty copper (*Heodes tityrus*, spp. *subalpinas*) (Plate XX Fig. 6). Niobe fritillary (*Fabriciana niobe*) (Plate YY Fig. 7), Arran brown (*Erebia ligea*), Scotch argus (*E. aethiops*) (Plate YY Fig. 8) and Woodland ringlet (*E. medusa*).

1993 saw a return to Switzerland, during July, once again in Wengen. This time I was better equipped with three text books, a net, several "pill" boxes, and a growing interest in the Satyrinae sub-family, especially the *Erebias*.

As I was beginning to get to know the area, I was able to choose certain localities in which to go recording. One of these was along the side of the valley overlooking the Lower Grindelwald glacier at Pfingstegg. Several Pieridae were seen, and on netting they were identified as the Wood white, Green-veined white and Southern small white (*Pieris manni*). A couple of Swallowtails were also seen. As I proceeded up the valley some interesting Lycaenids were recorded, these were the Alpine argus (*Abulina orbinesulus*), and Mountain argus (*Aricia artaxerxes*, spp. *allous*). The only Satyrines seen were the Marbled white (*Melanargia galathea*) and Woodland ringlet.

A walk on my second day was to be the best by far. It started near the Eiger at Kleine Scheidegg, 2000 metres (6550 ft), and finished at the Trümmelbach Falls, 900 metres (2650 ft). The habitats were very varied, high alpine pasture with occasional marshy areas, through woodland and finishing with some scrubby areas and winter hay meadows. The first species encountered looked like a Small heath, but on closer examination it proved to



Fig. 2. Pfingstegg gorge above Grindelwald

be an Alpine heath (*Coenonympha gardetta*), and while I was identifying it, a couple of Swallowtails flew past. As I neared the upper limits of the tree line, several fritillaries were observed, and they were the Shepherd's fritillary and Titania's fritillary (*Clossiana titania*).

As I entered the woodland, I found some very large open areas with herb-rich turf, and it was here that I saw some outstanding species. First was the Moorland clouded yellow (*Colias palaeno*), then Olive skipper (*Pyrgus serratulae*), Apollo (*Parnassius apollo*) (Plate YY Fig. 9) and Mountain clouded yellow (*Colias phicomone*). Along the wide paths through the wood were the Blind ringlet (*Erebia pharte*), Woodland ringlet (*E. medusa*) and Swiss brassy ringlet (*E. tyndarus*). Also seen was a single Arran brown. On leaving the wood, I entered a short turfed scrubby area which was full of



Fig. 3. *Papilio machaon*, Schynige Platte.

False heath fritillaries, Osiris blues (*Cupido osiris*) and Small blues (*C. minimus*). The final count on this one walk was 26 species.

The following day saw the weather turn much cooler, with the occasional snow shower. This was the trend for the next few days. I still went out walking though, and found several specimens roosting, including the Dewy ringlet, Blind ringlet, Small blue and Swallowtail. On my final day it dawned sunny and warm, but time only allowed me to stay local. I found, within a ten minute walk of Wengen, an un-cut hay meadow with a path going through it. With the warmer weather, the Small skipper (*Thymelicus sylvestris*) and Essex skipper (*T. lineola*) were just emerging, and these were flying alongside the Wood white, Small heath (*C. pamphilus*), Mazarine blue, Large wall brown and Black-veined white.

If anyone would like a complete species and locality list, please send a 9" x 7" SAE marked "Switzerland" to the above address.

RES – SCOTLAND REGION MEETING

The next meeting will be held on Wednesday 28th September 1994 at Scottish Natural Heritage, Battleby, Redgorton, Perth. The theme of the meeting will be Conserving Scottish Insects. It will be a one day meeting to assess the scientific and conservation significance of insects in Scotland. For further information contact Dr Graham Rotheray on (031) 225 7534, Dr Ian McGowan on (0738) 444177 or Dr J. Woodford on (0382) 562731.

ECUADOR

We came like ghosts in the night
 from untidy cities to tidy the forest with our computerised lists
 with tech and biotech

to do the godbit check the species from canopy to deck
 and from one smoker-clouded tree came 40 new beetles
 from one tree I ask you who knows what's out there

except we know the giant sloth has gone no hidden plateaux
 crowded with armoured saurians fat chance to find a parrot
 these days

perhaps the company machine can help us
 catalogue the small stuff before the seekers of oil and gold like Cortez
 wreck the land tamper with nature in the name of whatever
 progress so I'm told

* * * * *

our specimens and theories assuage the conscience
 perhaps we are the new Conquistadors who use science like
 religion to usurp

"Mariposas – aqui estan" it was a game among the leaves
 and-damp sweet places "Heysoos" and Leonardo
 open faces not streetwise lads "aqui estan senor"

knew all the nooks and crannies and stones with glyphs
 from the old people one day they would have nets like mine
 and George and Peter others with Anglo-Saxon names

not Aztec Inca or even Spanish will have come and gone
 with printouts PhDs perhaps to bring some sense to
 photographs for glossy magazines an exhibition

for those with time and money to act in earnest
 Mariposas at Jatun Sacha mariposas nocturnas at Los Cedros
 I gave my nets to "Heysoos" and Leonardo they were proud

It's the least I could do.

BOOK REVIEW

The Encyclopedia of land invertebrate behaviour by Rod & Ken Preston-Mafham. Quarto, hardback, 320pp, 215 coloured illustrations, 41 figs. ISBN 0 7137 2196 0. Blandford Press 1993. Price £30.00.

This is a very fine tome, put out in a very attractive dustwrapper. Due to the fact that they are the largest class and also the most intensively studied, insects form by far the greater portion of this book. Some invertebrate groups, such as the Chilopoda, have but a brief mention and it is surprising that the Vermes, a numerous group, are not included although the Onychopora are. The magnificent colour illustrations reflect the fact that larger species are easier to come across and photograph in the wild than the small obscure ones. They mostly show aspects of behaviour which could be difficult to describe in detail in print, and where photographs have not been available, line drawings are used to illustrate a point.

The book is divided into five main chapters, each of which is subdivided into a discussion of the separate invertebrate orders. The main chapters are: Sexual behaviour; Egg-laying behaviour; Parental care; Feeding behaviour and Defensive behaviour. The invertebrate "classes" discussed are those of the Gastropoda, Diplopoda, Chilopoda, Arachnids, Crustacea, Onychophora, Platyhelminthes and Insects. There is a very extensive bibliography and extensive indices. It was, however, discomfoting that the very first name I picked at random from the index turned out to be on an un-numbered (132) page! Further checking revealed that several pages are not foliated: 161 to 163 for instance. This is irritating and a bad slip-up on the part of the publishers. Also irritating is the habit of so many publishers to think they are running out of space when they reach the end of a book and print the indices in a minute type point size. Far better to have run on another four or eight pages – not much in a 300 plus page book – and make the indices less of an eye-strain to consult.

One only has to look at the bibliography to realise that this is a well-researched book. All aspects of behaviour are covered and illustrated. It is written in an often very colloquial style that is far more likely to keep the attention of the reader (. . . fungus with a short 'use-by' date. . . for example) and thus retain the fact in his or her memory, than the often dry as dust "scientific" texts put out in so-called academic books.

In spite of my criticisms above, these are of the publisher, not the authors, who have put together a work which, while it appears to be aimed at a general market, can in fact be considered as an erudite scientific text on invertebrate, particularly insect, behaviour and in my opinion will be of far greater value to any student of the subject than most of the texts available, often poorly if at all illustrated and far more expensive for what they offer than this book.

Brian Gardiner

SAFETY INFORMATION FOR ENTOMOLOGISTS

by Michael Majerus (4027)

University of Cambridge, Department of Genetics, Downing Street, Cambridge.

May I echo the request by Mike Halpin in *Bulletin* 51, page 180, for advice on any adverse effects that mercury-vapour discharge bulbs may have on the skin or eyes of persons (or animals) exposed to the light from these bulbs? I have been operating Robinson and Heath traps since the age of ten, in 1964. I run anything from one to twelve traps a night, and my garden Robinson trap is run, on average for 300 nights of the year.

Personally, I have always been blessed with very good eyesight and have suffered no obvious adverse effects to my sight or skin, despite prolonged exposure for many years. I have always taken the warnings about cracked outer bulbs seriously, and guard bulbs from the rain with upside-down pyrex beakers over the bulb, which must give additional protection. As mercury vapour moth traps are now widely used, some young enthusiasts beginning at a very early age and having the potential of using m.v. lights for many decades, any cogent advice would I am sure be gratefully received by many members of the Society. Given the legal responsibilities of teachers and course leaders in respect of their students, such advice would also be helpful to those of us who use moth traps as teaching aids on field courses.

To start the ball rolling, and because I have access to relevant safety information, I here note some of the hazards to which entomologists may be exposed in the course of their hobby. The chemicals used for killing insects, degreasing specimens and keeping stored specimens free from museum beetles, have potential risks. The following extracts are drawn from a volume of Hazard Data Sheets for products supplied by BDH Limited. These sheets were produced to enable BDH customers to meet the requirements of the Control of Substances Hazardous to Health (COSHH) regulations.

Ethyl acetate: highly flammable, vapour/air mixture explosive. Irritating to eyes and respiratory system. May be harmful if ingested in quantity. Prolonged inhalation may cause liver and kidney damage.

Diethyl ether: extremely flammable, vapour/air mixture explosive. May be harmful by ingestion and inhalation. Irritating to eyes and degreases skin. Continued inhalation of low concentrations of vapour may cause loss of appetite, dizziness, fatigue and nausea. Repeated inhalation or ingestion may lead to "ether habit", with symptoms resembling chronic alcoholism. Evidence of mutagenic effects.

Chloroform: may evolve toxic fumes in fire. Very toxic by inhalation, causing drowsiness, nausea, vomiting and unconsciousness. Toxic by ingestion. Irritating to skin and eyes, possibly causing conjunctivitis and burning. Has been found to cause cancer in laboratory animals. May cause adverse mutagenic or teratogenic (birth defects) effects.

1, 4 - Dichlorobenzene: combustible, may evolve toxic fumes in fire. Harmful by ingestion, inhalation and skin contact. Irritating to eyes and skin, possibly causing dermatitis. Inhalation of vapour may cause drowsiness and nasal irritation. Has been found to cause cancer in laboratory animals. May cause adverse mutagenic or teratogenic effects.

Naphthalene: combustible. Harmful by ingestion, inhalation and skin contact. Irritating to eyes and may irritate skin. Has been found to cause cancer in laboratory animals. Evidence of reproductive effects.

Trichloroethylene: combustible, may evolve toxic fumes in fire. Harmful by ingestion and inhalation, causing headache, dizziness and nausea. High concentrations may cause unconsciousness. Prolonged exposure may result in kidney damage. Effects are increased by consumption of alcohol. Irritating to eyes. Can be absorbed through skin. May cause adverse mutagenic or teratogenic effects.

The data sheets give First Aid recommendations. In the case of all the above chemicals, they suggest for contact with:

- a) **Eyes:** Irrigate thoroughly with water for at least 10 minutes. If discomfort persists obtain medical attention. (For Chloroform and Trichloroethylene, obtain medical attention anyway.)
- b) **Lungs:** Remove from exposure, rest and keep warm. In severe cases obtain medical attention.
- c) **Skin:** Wash off of skin thoroughly with water. Remove contaminated clothing and wash before re-use. In severe cases, obtain medical attention.
- d) **Mouth:** Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.

The data sheets give much additional information, including reactive hazards with other substances, spillage disposal advice, protective measures when handling, and storage advice. Full data sheets should therefore be consulted as appropriate for these and other chemicals that entomologists might use.

While not wishing to be alarmist in any way, I do recall that from the ages of 10 to 18 I kept my Lepidoptera collection well topped-up with either 1,4-Dichlorobenzene or Naphthalene crystals, in my bedroom, without any knowledge of the possible carcinogenic effects of these chemicals.

SOUND AFFECTS RINGLETS TOO

by Richard Revels (3942)

I found the article by Jan Koryszko in *Bulletin* **53**: 42 on the effect of sound on certain insects interesting. I should like to add that some of our Satyrine butterflies also react to sharp sounds.

Whilst trying to photograph Ringlets (*Aphantopus hyperantus*) on bramble flowers several years ago, I trod on a thick dry dead twig that broke with a loud "crack" and immediately the dozen or so Ringlets that were feeding on that bush took to the wing. They soon settled back on the bramble flowers again, so I clapped my hands together, and again most reacted to the sound.

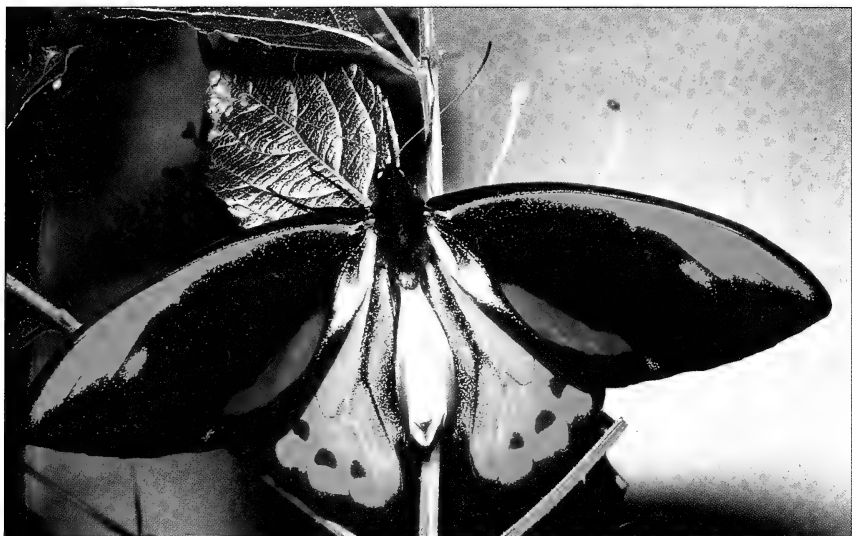


Fig. 1. The hybrid *Ornithoptera* "allotiei" (male).



Fig. 2. The hybrid *Ornithoptera* "urvidion" (male).

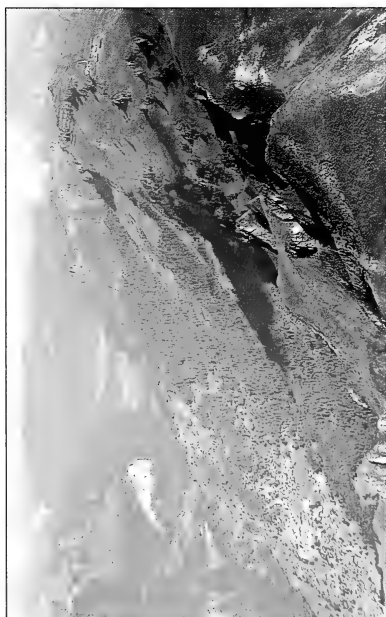


Fig. 3. Wengen, Switzerland from the Lauberhorn.

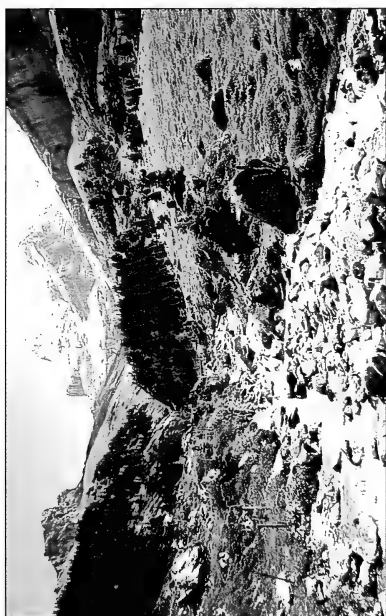


Fig. 4. Wixi Valley below Kleine Scheidegg, Switzerland.



Fig. 5. The Swallowtail, *Papilio machaon*.



Fig. 6. *Heodes tityrus subalpinus*, the Sooty copper.



Fig. 8. *Erebia aethiops*, the Scotch argus.



Fig. 7. *Erebia ligea*, the Arran brown.



Fig. 10. *Euchalcia variabilis* at Meiringen.

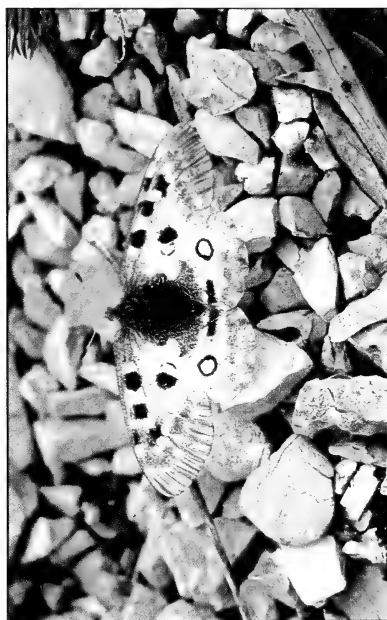


Fig. 9. The Apollo, *Parnassius apollo*.

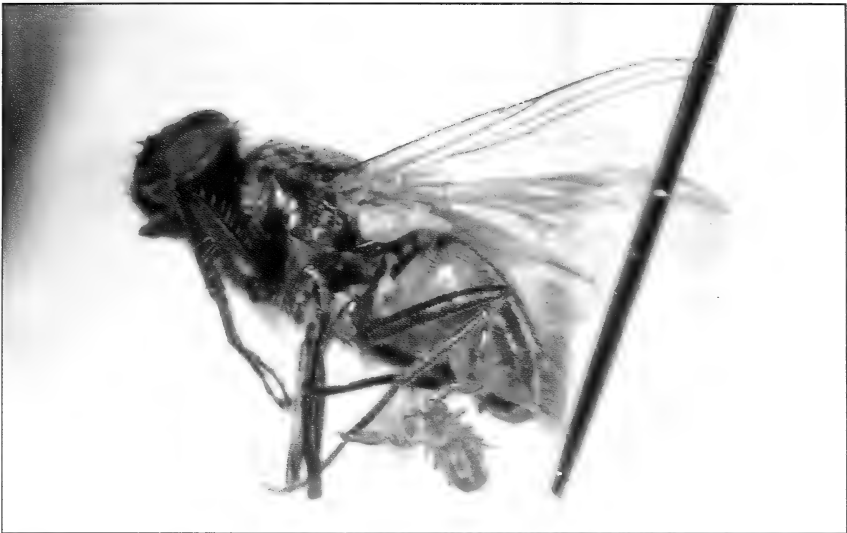


Fig. 11. A pseudo-scorpion hitch-hiker travels on a fly.



Fig. 12. The pseudo-scorpion is clearly shown to be attached to the fly's upper tibial region.

EXHIBITION REPORT AND LIST OF EXHIBITORS AT THE 1993 EXHIBITION, HELD AT KEMPTON PARK RACECOURSE ON 9TH OCTOBER

The day started grey, windy and wet but a good queue formed about an hour before opening time and a couple of the committee members sold programmes to ease the rush when the doors were opened. Due to the adverse weather conditions it was decided to let the people waiting to get in go up the stairs each side of the entrance until opening time. It has been a few years since we had a good start weather-wise; the forecast had promised us a dry start to the day. Oh well!

The numbers of people attending were slightly up on last year, with 1228 receipts being recorded. We must be doing the right things. There are still people getting in without paying as the venue isn't designed with security in mind. This is a problem that will have to be addressed.

There were 36 applications for table space on the booking form, with a further six verbal applications making a total of 42. I had 24 exhibits and reports: a further 19 applications did not have a report, and I had six exhibitors who did not send me the booking form but did hand in a report; if all the people who booked tables, verbally or otherwise, turned up with an exhibit (counting the ones who did not send me a booking form) we would have had a total of 48 exhibits. I know that we had quite a lot of exhibits but I did not think there were that many; but it was still a good showing considering the poor year we have had. We still need more effort. Come along all you members (1900) where are you? It is after all, your Exhibition. I have placed the exhibits in the most prominent position, and I now do your reports in full. What more can I do? If you exhibit, then make your efforts count by handing in a report. I cannot report what is not given to me. Reports are dealt with by a member of Council who has volunteered to do the job of collating the exhibits. Please make his job worthwhile.

Sixty-four dealers attended selling a variety of goods including a much restricted trade in livestock and deadstock. Also exhibiting were eight other Natural History Societies including the usual AES stands. A total of 73 stands were in operation.

I found that the catering this year was excellent; I hope you all agree, but I can only comment on what I found when I went for lunch. The bar was well staffed and all the food counters were open, and I received few complaints from people I asked; all in all a good showing, so let us all hope that this side of our Exhibition is well and truly sorted out.

I would also like to thank the following members for helping me to set up on Friday 8th October 1993. Colin Hart, Bernard Skinner, Colin Davies, Peter Baker, David Young, Dennis O'Keeffe, John Muggleton, Graham Collins.

My thanks also go to Graham Collins, David Young, Colin Davies and Peter Baker for helping me clear up after the Exhibition; this is not forgetting the helpers who gave up their free time throughout the day. The Exhibition would not run without this valuable source of assistance. Carry on the good work! Just a small note, the helpers on the evening before and the people who help clear up afterwards are invited for a free pint in the local hostelry. Anybody who wishes to help please send your name and address to me nearer the date, which for this year is 7th October 1994 for setting up and 8th October 1994 for the Exhibition. I do hope that I did not leave anybody out of the helpers, if I have, I can only apologise for the omission. I did not make a list this year so I was working from memory. Now what was the date of the next Exhibition??

Members' exhibits:

Peter Baker (8640). The Exhibit completed the display of butterflies of North America and comprised the families Pieridae and HesperIIDae. The whites and especially the sulphurs represented some of the most obvious and widespread Lepidoptera to be seen in the USA. The North American skippers show great abundance even on the most unpromising city centre waste lots. The HesperIIDae are a very numerous group in this part of America and including migrants and vagrants more than 300 species have been recorded. Of particular note were the genus *Colias*; some twelve species, some of which have a range extending into the deep Arctic. *Pieris rapae*, European cabbage butterfly; this widespread pest is one of the less welcome introductions from Europe, *Ascia monuste*, the Great southern white; a wide-ranging, solitary and fast-flying southern species. The dark migratory form can be found in large aggregations by roadsides prior to commencement of its northern migration. *Heliopetes ericetorum*, the Large white skipper; a very fast-flying skipper of the western deserts, local and only capturable on ragwort type flowers. *Carterocephalus palaemon*, Arctic skipper; very different in appearance from the European form of this insect which is a northern and sub-arctic species in North America. *Thymelicus lineola*, the European skipper; this harmless introduction from Europe, though rather local, can be found by the thousands in suitable habitats.

Clive Betts (4976). The Exhibit was in two sections; one was *The Bug Club*; a display about a new club for young people which aims to promote and support interests in insects through an informal quarterly newsletter with competitions, features and activities on a local and national basis. Based in Devon the club is attracting a wide range of young people (largely under the age of 12) from all over the country. Section two. *The Lazy Gardener's Wildlife Garden*; having taken on a garden that had been left to grow unchecked for a number of years, Mr Betts and his wife, Sian, had spent four years developing this small plot of land into a wildlife haven. A garden of this nature does not need a great deal of effort or expense but it does need some

planning and continuous attention. Both of them work full time and they now have a two-year-old son. They have been rewarded with a wealth of wildlife simply by planting some wild flowers in soil too poor to cope with formal plants; letting some patches of grass untouched apart from being cut every year (Mr Betts can count about seven species of grass now intermingled with wild vetch in places); replacing some very fussy ornamentals with more useful hardy species (eg. Hebe); encouraging in a controlled fashion what some neighbours regard as "dreadful weeds" – plants like nettles, bindweed, bramble, dock, dandelions, ivy, yellow archangel and deadnettle – and by adding a pile of old logs and airbricks intercepted on their way to the skip. Recorded insect life has included at least six species of solitary bees, two of which are uncommon, four species of crickets, damselflies by the dozen; some spectacular wood-boring beetles; six species of shield bug; regular visits by least ten species of butterflies; Hummingbird and Oleander hawkmoths and the Jersey tiger. Other visitors range from frogs, newts, hedgehogs, jays, great tits, bank voles and a sparrow hawk.

M.B. Bonsal (9169). The application stated that a Tephritid parasitoid display would be shown but no exhibition note was handed in.

Phil Bragg (8737). The application stated that Phasmida of Borneo would be shown but no exhibition note was handed in.

Alan Butler (7903). The application stated that British and European butterfly aberrations would be shown but no exhibition note was handed in.

Steve Button (7649). The application stated that British Macro aberrations would be shown but no exhibition note was handed in.

M.E. Castle. (2490). The application stated that photographs of insects and arachnids would be shown but no exhibition note was handed in.

Peter Cribb. (2270). 1993 was this well known lepidopterist's final year as he died soon after the Exhibition. He will be sadly missed.

Shown were examples of species seen in Central and Northern Spain and from Landes, France. Also shown were examples of species bred from stock in 1993. The list of species is as follows: *H. semele*, *H. lupinus*, *C. iphioides*, *C. dorus*, *S. actaea*, *M. lachesis*, *P. napi meridionalis*, *F. adippe chlorodippe*, *B. hecate*, *I. lathonia*, *M. deione*, *C. croceus*, *C. alfacariensis*, *M. daphnis*, *L. coelestissima*, *L. albicans*, *P. nivescens*, *P. dorylas*, *A. ainsae*, *A. montensis*, *A. cramera*, *P. icarus*, *L. thersites*, *L. boeticus*, *E. argiades*, *P. argus*, *L. roboris*, *N. esculi*, *S. proto*, *P. cinarae*, *P. carthami*, *T. acteon*, *H. comma*, *M. dryas*, *M. jurtina hispulla*, *A. arethusa*, *H. morpheus*, *A. iris*, *A. crataegi*, *E. aurinia*, *M. athalia*, *P. apollo*.

David and Elaine Cork (2962). The application stated that a poster photographic display would be shown but no exhibition note was handed in.

C. Drage (8644). Exhibited was a case containing fifteen specimens of four species bred or captured in the period 1990 to 1993 from the old county of Huntingdonshire. Apart from specimens for comparison the remainder were aberrations of the Meadow brown, Large skipper, Hedge brown and a rare underside aberration of a female Large copper, *L. dispar batavus*, ab. *sagittifera* Hormuzzaki.

R. Dyke (4182). Drawings of moths that were used as family heading in the book: *Larger Moths of the London Area* by Colin Plant, published by the London Natural History Society. Pictured were *Hepialus humuli* Linn. Ghost moth. *Zeuzera pyrina* Linn. Leopard moth. *Zygaena filipendulae stephensi* Dup. Six-spot burnet. *Synanthedon myopaeformis* Borkh. Red-belted clearwing. *Drepana falcataria* Linn. Pebble hook-tip. *Phalera bucephala* Linn. Buff-tip. *Mimas tiliae* Linn. Lime hawk. *Orgyia antiqua* Linn. Vapourer. *Abraxas grossulariata* Linn. Magpie. *Arctia caja* Linn. Garden tiger. *Scoliopteryx libatrix* Linn. Herald. *Pavonia pavonia* Linn. Emperor moth. *Thyatira batis* Linn. Peach blossom. *Lasiocampa quercus quercus* Linn. Oak eggar.

Brian O.C. Gardiner (225). With Norman Cravitz produced an exhibit showing how the AES *Bulletin* was produced. A series of examples, layouts and photographs showed how articles are received, edited, typeset, proofed, printed, folded, gathered, trimmed and finally posted. The examples included bad and good manuscript and how our pages are made up. It also showed the Linotron output from the type-setting computer, from which the negative is made and the image transferred to an aluminium plate from which the pages are printed.

Chris Gardiner (5249). The application stated that a display case of moths from the 1993 season would be shown but no exhibition note was handed in.

M. Gascoigne-Pees (7468). The application stated that a small case of butterflies of Cyprus would be shown but no exhibition note was handed in.

P. Gould (9462). Showed an empty pupa case that was found blowing around in the dunes at Studland Nature Reserve, Dorset.

D. Hall (5239). Exhibited all of the Rhopalocera currently found on the island of Madeira. The emphasis of the display was placed on the endemic species, which comprised *Lycaena phlaeoides*, *Pararge xiphia*, *Hipparchia maderensis* and the subspecies *Gonepteryx cleopatra maderensis* and *Vanessa indica calliroe*; the latter also being found in the Canary Islands. Changes in the butterfly fauna over the past 25 years were exemplified by the presence of *Pieris rapae* and *Pararge aegeria* and the absence of *Pieris brassicae* of which the subspecies *wollastoni* was endemic. A possible hybrid between *Pararge xiphia* and *P. aegeria* was included in the display; the

specimen was taken in an area where both species were abundant and many interspecific “chases” were noted as well as one interspecific copulation. It is of interest to note that at low levels *P. xiphia* had been completely replaced by *P. aegeria*; at medium altitudes (400-500m.) the two species occurred in almost equal numbers and it was not until one reached about 850m. that *P. aegeria* became rare and *P. xiphia* predominated.

A. Halstead (6346). Exhibited some local Coleoptera taken in 1993 and included a male *Lampyris noctiluca* Linn. (Lampyridae) from a maliase trap at Woodbastwick, Norfolk on 7-9th July 1993. *Cteniopus sulphureus* Linn. (Tenebrionidae) swept from Breckland vegetation at East Wretham Heath, near Thetford, Norfolk on 4th July 1993. *Phytoecia cylindrica* Linn. (Cerambycidae) swept from lakeside vegetation at Sandford Lake, Dinton Pastures Country Park, Berkshire on 19th June 1993. *Podagrica fuscicornis* Linn. (Chrysomelidae) eating garden hollyhock leaves at Royston, Hertfordshire on 3rd July 1993. *Gyrpus equiseti* F. (Curculionidae) swept in a boggy meadow at Whiteford Burrows, Gower Peninsular, Glamorgan on 23rd April 1993. A male and female of *Xyleborus dispar* F. (Scolytidae) found in a dead branch of *Elaeagnus angustifolia* at Whatlington, near Battle, East Sussex on 2nd September 1993. *Hyperaspis pseudopunctulata* Mulsant. (Coccinellidae) swept from cliff top vegetation at Horton, south coast of Gower Peninsular, Glamorgan on 24th April 1993. A male *Meloe proscarabaeus* Linn. (Meloidae) found crawling over turf on a cliff top at Horton, south coast of Gower Peninsular, Glamorgan on 24th April 1993. A female *Plateumaris braccata* Scop. (Chrysomelidae) swept from reeds at Upton Broad Fen, near Upton, Norfolk on 10th July 1993. A male *Notaris scirpi* F. (Curculionidae) swept from lakeside vegetation at White Swan Lake, Dinton Pastures Country Park, Berkshire on 5th June, 1993. *Ceutorhynchus trimaculatus* F. (Curculionidae) found on *Carduus nutans* at East Wretham Heath, near Thetford, Norfolk on 11th July 1993. A further exhibit was a gate post approximately five and a half inches square which was set in place in a garden near Godalming, Surrey with 29½ inches below soil level. An oak post of this size would be expected to last for perhaps 20 years, however, in just five years the below ground portion had been eaten away over its entire length, with an approximate 50% reduction in size in the worst affected portion down to nine inches below soil level. The remaining wood shows no obvious signs of decay. No insects were seen by the person who removed the gate post. Hopefully termites are not raging through Surrey – more likely culprits are larvae of the stag beetle, *Lucanus cervus* Linn. These usually feed on dead stumps rather than what was presumably seasoned timber but Mr Halstead assumes that they could cause this damage and asked for any suggestions.

Colin Hart (3845). Exhibited some new and interesting moth records for 1992 and 1993, mainly from his garden trap at Buckland, near Reigate, Surrey (VC 17, TQ 223502). Late summer 1992 seemed to be a time of much insect activity as he recorded many migrants and a number of uncommon resident species. The species listed are as follows. *Hepialus fusconebulosa* Deg. Map-winged swift; a new species in Buckland. Evans in his local list for the Croydon area says "very local and scarce". This poor but unmistakable specimen came to UV light on 8th June 1993. *Catarhoe rubidata* D. & S. Ruddy carpet; he was most surprised to find this now rather rare and beautiful moth which came to UV light at Buckland on 29th June 1992. *Chloroclysta siterata* Hufn. Red-green carpet; a new species for Buckland. Evans says "very scarce and reported only from West Humble". This specimen was late as well as scarce and came to the garage light on 27th November 1992. *Chesias rufata* Fabr. Streak; one female to light on 24th April 1993, the only example of this moth that he has seen in the south-east. *Euxoa tritici* Linn. White-line dart; one or two specimens of this moth turn up every few years, presumably from a colony a few miles away; this one came on 21st August 1992. *Xestia rhomboidea* Esp. Square-spotted clay; noted in Evans as "very local and scarce"; this is the first specimen he has seen in the area and it came to the garden trap on 19th August 1992. *Mythimna loreyi* Dup. Cosmopolitan; about twenty specimens came to light whilst he was on holiday at St Keverne, Cornwall during a week in mid-September 1992. All were rather worn. *Trichoplusia ni* Hb. Ni moth; a single specimen, the first he had ever seen, came to light on the same holiday in Cornwall on 17th September 1992. *Macdunnoughia confusa* Steph. Dewick's plusia; a rather worn specimen of this rare migrant came to light at Buckland on the night of 20th August 1992. *Autographa gamma* Linn. Silver Y; one specimen of the form *gammina* came to light at Buckland on 19th August 1992. *Abrostola trigemina* Wernb. Dark spectacle; the first garden record for this London moth, came to light at Buckland on 22nd June 1993. Mr Hart's references were from Evans L.K., 1973. A Survey of the Macro-lepidoptera of Croydon and North-east Surrey. *Proc. Croydon Nat. Hist. Soc.* **14**:273-408.

James Hereward (9928J). The application stated that Mygal spiders, large stick insects and giant millipedes would be shown but no exhibition note was handed in.

Sheila and Anthony Howell (7369) & (7320). The application stated that exotic Macros in the form of *Colias* species from Europe (Czech Republic) would be shown but no exhibition note was handed in.

Robin James (5005). An exhibit showing typical examples of *Pieris brassicae cheiranthi* Hübner, bred from livestock collected in Puerto de la Cruz, Tenerife together with F2 generation examples showing the variation obtained. Also shown were examples of the F2 generation cross between *brassicae* ab *coerula* and *chieranthi*.

Emma Levy (10027J). The application stated that two giant land snails would be shown but no exhibition note was handed in.

Keith C. Lewis (3680). The application stated that Japanese Coleoptera from Hokkaido would be shown but no exhibition note was handed in.

R.F. McCormick (3375) & **Colin Penney** (3880). British Macrolepidoptera. Species from a week in Derbyshire plus other interesting species seen this year. Although the week of 22nd to 28th August had poor weather we recorded (and exhibited) species from the following sites: Beeley Moor. (Slagmill Plantation and the "The Triangle"). *E. testata* Linn. Chevron, *E. populata* Linn. Northern spinach, *H. furcata* Thunb. July highflyer, *E. filigrammaria* H.-S. Small autumnal moth, *X. agathina* Dup. Heath rustic, *P. glareosa* Esp. Autumnal rustic, *X. castanea* Esp. Neglected rustic, *A. chi* Linn. Grey chi (including abs *olivacea* and *nigrescens*), *L. solidaginis* Hb. Golden-rod brindle, *A. lucens* Freyer. Large ear and *S. interrogationis* Linn. Scarce silver Y.

The next two localities were where we had static traps running all of the week. Frogget, near Chesterfield: *E. testata* Linn. Chevron, Linn. *E. populata* Linn. Northern spinach, *H. furcata* Thunb. July highflyer, *X. agathina* Dup. Heath rustic, *P. glareosa* Esp. Autumnal rustic, *X. castanea* Esp. Neglected rustic, *A. chi* Linn. Grey chi, *S. lucerneae* Linn. Northern rustic, *A. centrago* Haw. Centre-barred swallow, *C. trapezina* Linn. Dun-bar (grey form), *A. lucens* Freyer. Large ear and *A. bractea* D. & S. Gold spangle.

Eastmoore, Sheeplees Farm, near Chesterfield: *N. nymphaeata* Linn. Brown china mark (brown form), *X. agathina* Dup. Heath rustic, *P. glareosa* Esp. Autumnal rustic, *A. chi* Linn. Grey chi and *A. centrago* Haw. Centre-barred swallow.

Other interesting moths taken during 1993. *D. curvatula* Borkh. Dusky hook-tip, 6th British record from Church Norton, Pagham. *S. gigantella* D. & S. female with male colouring taken at Stoke Saltings, Kent. *N. nymphaeata* Linn. Pale example from Sharp Street, Catfield. *P. obtusa* H.-S. Small dotted footman taken at Sharp Street, Catfield. *P. boisduvaliella* Guen. Taken as larvae from Thorpeness, Suffolk. *O. gracilis* D. & S. Powdered quaker, pink form taken as larvae on the Isle of Mull. *M. flavalis* D. & S. taken from Lullington, Sussex. *X. fluctuata* Linn. Garden carpet, form *thula* taken at Chelmsford, Essex and *L. testacea* D. & S. Flounced rustic, pale and melanic forms from Chelmsford, Essex and Winchester, Hants.

B.J. MacNulty (4528). Another sad loss for the entomological fraternity having passed away. He was in the process of showing all of the macro moth species that had been seen on the Gower Peninsular. His exhibit, if it was shown (there was no exhibition notice), would have been a continuation of this work.

Dr S.P. Millard (4372). Exhibited spring butterflies from Cyprus in 1993 collected between 21st May and 3rd June 1992. Most species were obtained from the southern slopes of the Troodos mountains between 350 metres and 1050 metres with the exception of two trips, one to Nicosia and the other to Larnaka. Interesting species include *Chilades galba*, *Hipparchia syriaca*, *Maniola cypricola*, *Pelopidas thrax*, *Glaucopsyche paphos*, *Thersamonia thersamon* and *Tarucus balkanicus*. The Exhibitor and his family went to a resort in the Troodos mountains armed with a copy of *Les Rhopaloceres de Chypre* determined to find *G. paphos* and saw on their travels *Allancastria cerisyi cypria*, *Anthocharis cardamines phoenissa*, *Celastrina argiolus* and *Pseudophilotes vicrama astabone*.

June Mulvaney (8648). The exhibitor stated on the application that Mygal spiders would be shown but no exhibition note was handed in.

Dennis O'Keeffe (8476). Exhibited Microlepidoptera bred from dead wood and/or fungus. *Morophaga choragella* D. & S., *Nemapogon granella* Linn., *N. cloacella* Haw., *N. ruricolella* Stt., *Triaxomera parasitella* Hubn., *Batia unitella* Hubn. and *Esperia sulphurella* Fabr.

Also shown were the following species bred from dead wood and the fungus *Daldinia concentrica*, although the larvae are not known to feed on these pabula; *Argyresthia brockeella* Hubn. and *A. goedartella* Linn.

David Oram (7127). Exhibited a selection of moths and butterflies caught while on holiday in New Jersey, USA. The exhibit was compiled by three members of the family; David, Richard (age 13) and Rebecca (age 9). Species shown were: Tiger swallowtail, Spicebush swallowtail, Great spangled fritillary, Silver-spotted skipper, Atlantis fritillary and various hawkmoths.

Joe Parker (9002J). Exhibited his usual menagerie of giant snails and other exotic creatures, but no exhibition note was handed in.

John Payne (5293). The application stated that aberrations of butterflies would be shown but no exhibition note was handed in.

Tony & Cathy Pickles. Showed both Macro and Microlepidoptera, the Micros exhibited were *Donacaula forficella* Thunb.; a varied selection from the New Forest bogs showing the dark form described by Fasnidge from this locality. *Pediasia contaminella* Hb. ab. *sticheli* Constant.; a series from the Norfolk coast where this dark form was found to be frequent this year. *Anerastia lotella* Hb.; a series from the Norfolk coast including specimens with distinct black dusting on the nervures, similar to those described by Barrett as being taken by G.F. Matthew on the east coast. Among the Macromoths shown was *Acronicta psi* Linn. ab. *virga* Tutt., Grey dagger from Cradley Heath, Staffordshire on 2nd July 1993.

Jim Porter & Graham Collins. Exhibited the prints of the on-going task of photographing all of the larvae of the British Macrolepidoptera; they have all but 20 species and it is to be the subject of a forthcoming illustrated guide.

P.J.C. Russell (8977). The application stated that a case of butterflies from Madeira would be shown but no exhibition note was handed in.

G.R. Smith (4950). Exhibited a small display of some butterflies and moths reared or found during the 1993 season comprising: A dwarf version of *Erynnis tages* Linn. Dingy skipper taken on the Wiltshire Downs during June, A very small specimen of *Quercusia quercus* Linn. Purple hairstreak found at an unusually early date for this species on 27th June at West Wiltshire. *Ladoga camilla* Linn. White admiral which was approaching a true ab. *nigrina* Weymer. taken in a small wood in Hampshire on 17th June; the slightly asymmetric underside could be seen from an accompanying photograph. A second brood *Clossiana euphrosyne* Linn. Pearl-bordered fritillary, an example of one of the two butterflies which appeared in October 1992; the specimen exhibited emerged on the day of the Exhibition 1992. *Callimorpha quadripunctaria* Poda. Jersey tiger reared from a south Devon female; one of these was the yellowish form ab. *lutescens* Staud. A typical specimen was included in each case for comparison.

St Ivo Entomological & Natural History Society. The usual engaging menagerie exhibited by this enthusiastic school master and his pupils. All things furry, scaly and slimy were shown with great keenness by the juvenile *Homo sapiens* present.

David Stokes (7630). Exhibited varieties of the Small heath butterfly ab. *bipupillata* Leeds and ab. *parvipunctata* Leeds; both of these specimens were ssp. *rhoumenensis* from the Isle of Skye. Also shown was ab. *obliquajuncta* from Bedfordshire showing homoeosis on both hind wings.

Peter Tebbutt (7940). Showed aberrations taken over recent years. The main part consisted of a range of Ringlets including ab. *sexoculatus*, ab. *decora*, ab. *lanceolata*, ab. *areta*, ab. *caeca* and ab. *goodsoni*. Also shown were Small whites ab. *fasciata* + *nigropuncta* and ab. *deleta* + *unimacula*; a pair of dwarf Green-veined whites and Brown argus ab. *pallidior* and ab. *postico-obseleta*. Several Meadow browns and Gatekeepers were exhibited along with second brood examples of White admiral and Duke of Burgundy fritillaries.

These were bred specimens but were not forced in any way; other larvae or pupae in the same cages went into hibernation as usual.

John Tennent (7756). Three cases of North African Satyrine butterflies, showing forms of species where taxonomic confusion exists in the current entomological literature, or where no illustrations are available.

Case One: The genus *Berberia* (de Lesse 1951).

The genus *Berberia* is endemic to the Maghreb states of Morocco, Algeria and Tunisia. It is also found in western Libya. It contains two species; *abdelkader* and *lambessanus* and both have been the subject of much confusion in the literature. This is most notable in Higgins and Riley's *Field guide to butterflies of Britain and Europe*, in which *lambessanus* is illustrated as first brood *abdelkader* and *abdelkader nelyai* as second brood *abdelkader*. Both species are actually single brooded. Sub-species *marteni*, mentioned in Higgins and Riley, is a synonym of *nelyai*. [For a comprehensive discussion amounting to a taxonomic revision of the genus see "The *Berberia abdelkader* (Pierret 1837) enigma; a review of named forms; comments; a solution offered (Lepidoptera: Satyridae). *Nota lepid.* In press.]

Berberia abdelkader abdelkader Pierret 1837.

Berberia abdelkader nelyai Seitz 1911.

Berberia abdelkader taghzefti Wyatt 1952.

Berberia lambessanus Staudinger 1901.

Case Two: *Coenonympha vaucheri* (Blachier 1905).

Coenonympha vaucheri is a Satyrid butterfly endemic to the mountains of Morocco in North Africa. It occurs in four distinct forms in different parts of the country. It was named after Henri Vaucher of Tangier who accompanied Geoffrey Meade-Waldo as taxidermist and interpreter on his expeditions to the High Atlas mountains. It was on one of these expeditions that the butterfly was first discovered. It almost became known as *Coenonympha meadewaldoi*, a name proposed by Elwes in 1905, but abandoned when he realised that Blachier had already described it.

Coenonympha vaucheri vaucheri Blachier 1905.

Coenonympha vaucheri berberensis Lay and Rose 1979.

Coenonympha vaucheri annoceuri Wyatt 1952.

Coenonympha vaucheri rifensis Weiss 1979.

Case Three: The genus *Lasiommata* (Westwood 1841) in North Africa.

Lasiommata megera is common throughout the Meghreb States of Morocco, Algeria and Tunisia. It is very variable in the number of extra sub-apical and submarginal ocelli, particularly in the female. *Lasiommata maera* is not a common butterfly in North Africa and is rare in collections. It is local in the mountains of Algeria and throughout the Rif and Middle Atlas mountains in Morocco. It is replaced in a restricted area of the High Atlas mountains by *Lasiommata meadewaldoi*, described by Rothschild as a form of *maera* from a single, not very typical, female specimen still extant in the Natural History Museum, London. This was taken by Geoffrey Meade-Waldo in 1905 at the same time as he discovered *Coenonympha vaucheri*.

Meadewaldoi was never illustrated and there has been considerable confusion in the entomological literature over the taxonomy of the two species in the Maghreb. [For further information see "An illustrated note on the genus *Lasiommata* (Westwood 1841) (Lepidoptera: Satyrinae) in North Africa" *Entomologist's Gazette*. In press.]

Lasiommata megera Linnaeus 1767.

Lasiommata megera adrasta Hübner 1805.

Lasiommata meadowaldoi Rothschild 1917.

Dr Raymond Thompson (9301). This exhibitor, along with Kay Medlock, again produced a fine exhibition stand on behalf of the British Dragonfly Society. Research work undertaken by the North of London group of BDS was illustrated with bar graphs showing distribution of Odonata species on the Cornmill Stream in Essex; an on-going study. Ray Thompson showed new video studies of the prolarval stock of *Libellula fulva*; *Coenagrion puella* and *Ischnura elegans* were shown; an event in the Dragonfly life cycle rarely observed. Kay Medlock showed a further selection of excellent Dragonfly slides, both British and Foreign, on a continuous projector; many visitors to the stand were enthralled and reluctant to leave.

Raymond Uffen (1660). Exhibited a panel of photographs showing arthropod visitors to a clump of flowers of *Inula hirta* in his garden on a single day. Represented were flies, bees, butterflies, micromoths, plant bugs, ants, beetles, leaf miners and spiders.

David Veevers (8910J). The application form stated that photographs and Orthoptera would be shown but no exhibition note was handed in.

D.H. Walker (5998). Exhibited two drawers of insects from Saudi Arabia collected in the period 1980 to 1990, and photographs illustrating sand desert, rock desert, an oasis and taking tea with hospitable nomads in their black tent; (the exhibitors' thanks go to them for their help). Insects exhibited were; Orthoptera; *Acrididae* (grasshoppers), *Anacridium aegyptium* L. (Egyptian tree locust), *Aiolopus thalassinus* Fab. (grass-pest), *Poekilocerus bufonius* Klug. (milkweed toadi); male and female; this insect has red wings which denote that it is poisonous to birds. Dermaptera (earwigs); Labiduridae (long-tail earwigs), *Labidura riparia* Pallas (tawny earwig). Dictyoptera (cockroaches and mantises); Mantidae (praying mantises), *Mantis* ssp. brown desert species, *Empusa* ssp. Oasis dweller, *Oxythespis nilotica* Giglio-Tos. (fairy mantis), *Ertemiaphila braueri* Krauss. (common ground mantis); this insect resembles a stone. Hemiptera (true bugs, cicadas etc); Pentatomidae (shield bugs); *Nezara viridula* (green plant bug), Lygaeidae (ground bugs), *Lygaeus equestris* L.; is very common, its bright red colour is a joy to see. Nepidae (water scorpions); *Laccotrephes fabricii* Stal.; usually in a pool, however it is most attractive in flight on a hot day. Homoptera (cicadas etc);

Cicadidae (cicadas); *Psamocharias flavicollis* (orange flushed cicada), beautiful specimens which are hard to catch. *Melampsalta musiva* Germar. (tiger cicada), has a lovely song. Lepidoptera (moths and butterflies); Sphingidae (hawkmoths); *Agrius convolvuli* L. (Convolvulous hawkmoth), *Macroglossum stellatarum* L. (Hummingbird hawkmoth), *Hyles lineata livornica* Esp. (Striped hawkmoth), *Hippotion celerio* L. (Silver-stripped hawkmoth), Arctidae (tiger moths); *Utetheisa pulchella* L. (Crimson-speckled footman), two fine specimens from the oasis. HesperIIDae (skipper butterflies); *Spialia doris* Walker. (Aden skipper); a very fine pale specimen. Papilionidae (swallowtail butterflies); *Papilio demodocus* L. (Citrus swallowtail), a magnificent sight at farms and oases. Pieridae (whites and sulphur butterflies); *Colotis fausta* Oliver, a fine short series. Lycaenidae (blue butterflies); *Deudorix livia* Freyer. (Pomegranate playboy), was seen to migrate for one year only. *Tarucus balkanicus* Freyer (Little tiger blue), *Freyeria trochylus* Freyer. (Grass jewel), two tiny specimens. Nymphalidae (tortoiseshells and fritillaries); *Junonia ornithia* here Lang., a fine series of male and female specimens. Diptera (true flies); Asilidae (robber flies); the giant fly shown, when first seen, was thought to be a dragonfly; as yet unidentified, the wingspan is 52mm and the body length 45mm, the species is found only in the Al Hasa oasis to date. Syrphidae (hoverflies); *Eristalinus megacephalus* Rossi. (big-headed dronefly). Hymenoptera (bees, wasps, ants and ichneumon flies); Specidae (digger wasps); *Stizus vespoides* Walker. (hornet digger), huge wasp with wingspan 50mm and body length 30mm. Eumenidae (potter wasps); *Delta dimidiatipenne* Saussure. (red potter wasp), *Delta campaniforme* Fab. (harlequin potter wasp). Pompilidae (spider hunting wasps); *Cyphononyx bretonii* Guen. (spider witch), an awesome insect. Chrysididae (cuckoo wasps); *Stilbum cyanurum* (emerald cuckoo wasp), a fantastic metallic colour. Formicidae (ants); *Camponotus xerxes* Farel. (desert giant ant), a winged soldier ant. Coleoptera (beetles); Carabidae (ground beetles); *Anthia duodecimguttata* Bonelli. (domino beetle), *Scarites guineensis* Dejean. (sabre-tooth beetle), *Brachinus nobilis* Dejean. (rufus bombardier), two fine specimens. Dytiscidae (diving beetles); *Eretes sticticus* Linn. (fawn diving beetle), *Prodaticus pictus* Sharp. (polkadot diving beetle), rare. Meloidae (oil beetle) sp., a showy specimen. Tenebrionidae (darkling beetles); *Adesmia cancellata* Klug. (pitted beetle), its long legs lift this species clear off the hot ground. Buprestidae (jewel beetles); *Steraspis speciosa* Klug. (emerald beetle), very large and rare in Central Arabia. *Julodis euphratica* Castelman & Gory. (sulphurous jewel beetle), common and attractive in flight.

Paul Waring (4220). The exhibit was in two parts, one on Foreign Macrolepidoptera and the other concerning British Macrolepidoptera.

Foreign Lepidoptera: A display of nineteen species of hawkmoths (Sphingidae) recorded between January 1982 and March 1993 in Southern Sudan, together with notes and photographs of the habitats in which they

were found. The species shown, in the main from Nyany camp, are listed. *A. convolvuli* Linn., *A. atropos* Linn., *X. morgani* Walker., *P. niloticus niloticus* Jordon., *C. hylas virescens* Wall., *D. nerii* Linn., *N. vau* Walker., *N. comma* Roths. & Jordon., including form *deresa*, *N. peneus* Cramer.; only seen in Juba, capital city of southern Sudan. *N. accentifera* Palisot & Beauvois., *H. lineata livornica* Esp., *B. medea* Fab., *E. megaera* Linn., *H. osiris* Dalman., *H. celerio* Linn., *H. eson* Cramer., *H. balsaminae* Walker., *H. rebeli* Roths. & Jordon. and *M. trochilus* Hübn., seen near Gilo in the Imatong mountains. Site details: Nyany is between Bor and Kongor, Jonglei Province, Southern Sudan. It is an old Dinka cattle camp-site some 80km north of Bor and 10km east of the Jonglei village. Location 6.52°N 31.25°E. Nyany was the Base Camp of the Jonglei Ecological Research Team (see Howell, Lock and Cobb 1988).

British Macrolepidoptera: A display explaining the national survey of the Goat moth, *Cossus cossus* and requesting post-1979 records. The exhibit included a photograph of the larva, samples of timber with Goat moth workings, an extruded pupal case and an up-to-date distribution map from the forthcoming *Atlas of the Rarer Macro-moths of Great Britain*.

Len Winokur (8770) Exhibit concerning the evolution of mainland Britain Speckled wood butterflies. Shown were:

(1) *Pararge aegeria tircis* from south England, and from low (50-60m) and high (200-220m) altitude in north Wales; and subspecies *oblita* from north-west Scotland. Each stock is divided into samples reared under 16 hours daylength at 14°, 17° and 20°C. The samples reveal intrinsic population differences with size increasing northwards (but no significant difference between altitudes), and that in each population cooler temperatures tend to generate larger specimens. These trends suggest that the south-north cline may have arisen through local influences of temperature on size becoming hereditary traits (Waddington, C.H. 1961. *Adv. Genet.*, **10**:257-294).

(2) A new variant from north Wales with an additional eyespot in ventral forewing s2, designated *mesoventro-s2/s5 biocellata*; types are shown for comparison. Breeding showed the gene to be recessive. Both populations showed similar gene frequencies (lower and upper estimates: 8% to 30%), indicating some movement of individuals between them which would limit the evolution of altitudinal differences. Thus a large (and pale) high latitude Welsh form, f. *drumensis*, described by J.A. Thompson (1952. *Ent. Rec. J. Var.*, **64**: 161-166), more likely represents a local climatic effect and not a distinct race.

(3) Specimens with modified wing patterns from north Wales stock. In the high altitude sample they appeared during the first generation at 14°C, but in the low altitude sample they appeared only after two generations at 14°C. Earlier work had shown similar pattern modifications to appear at 14°C under

16 hours daylength in south England specimens whose parents had been chilled as pupae (L. Winokur, 1992. *Nota Lepid.* suppl. **4**: 36-56). The modified specimen also underwent diapause. Thus pattern modification and pupal diapause under 14°C and summer daylength appear to follow when the previous generation too has experienced cool temperatures – more likely at high altitude; *P. aegeria* pupae normally diapause only under winter daylengths. The modified specimens also grew more slowly as larvae and were somewhat larger than the typical specimens. Pattern modification in north Wales stocks may reflect the fact that 16h is longer than daylengths typical of times in their season when prevailing temperature is 14°C. It is therefore possible that under shorter daylengths, these diapause pupae would have produced more than usual early spring brood forms in which the pale markings were more extensive. Indeed in subspecies *oblita*, from a cooler climate zone and where 16 hours daylengths occur later in the summer (G. Thompson, 1980. *The Butterflies of Scotland*), diapause pupae produce typical early spring forms. He thus proposes that *drumensis* forms appear following a successive cold winter and cool summer, resulting in slower larval growth and hence particularly large adults (C. Ray *J. Morphol.* **106**: 85-108), and a protracted pupal diapause under winter daylengths from which pale early spring forms emerge in June rather than the usual April-May (M.J. Goddard, 1967. *Entomologist*, **100**: 241-254).

The compiler of these notes is not responsible for claims made by the exhibitors. However, an effort has been made to be as accurate as possible.

Roy McCormick (3375).

INCREASING NUMBERS OF THE BRIMSTONE BUTTERFLY AT MEIR

by Jan Koryszko (6089)

During the spring and late summer of 1993 the Brimstone (*Gonepteryx rhamni*) has been reported in new areas at Meir. These include Meir Park, Meir Heath, Longton Park and Blurton, with a singleton at Fenton. Its main stronghold is at Western Sprink close to my home where its foodplant also grows. Over the past few years buckthorn has been extensively planted in parks and around new housing estates as well as in other areas. The butterflies seen were wandering males and it seems to show that planted buckthorn in these areas encourages this butterfly to extend its range, but only time will tell if more of its foodplant needs to be planted for a successful establishment to new areas.

BUTTERFLYING IN SCANDINAVIA, SUMMER 1992

by P.J. Russell (8977)

Oakmeads, Wessex Avenue, East Wittering, W. Sussex PO20 8NP.

(Continued from page 137)

I was elated when I found *Dryas octopetala*, a suggested foodplant for *Clossiana polaris* (Polar fritillary), *Astragalus alpinus*, the foodplant of *Colias hecla* (Northern clouded yellow) and other Arctic species, and bright red clumps of *Silene acaulis*, whose flowers are very attractive to almost all Arctic butterflies. It was not long before Mike drew my attention to a yellow butterfly dashing across the slopes; after a quick chase I had my first *C. hecla* in the bag! A few minutes later I netted another and missed a third, but was very pleased with my two fine fresh males as we returned to the van to continue our climb up the track. It was still only mid-afternoon and the sun was still shining down from a cloudless sky as we pulled off the track onto a flat gravel area to park for the night. I set off for a foray up the slope of this well-known collecting ground but to reach it I had first to descend a small but fast-flowing stream, whose icy waters chilled my feet as I forded it. I scrambled out up the far bank holding onto a branch of a small birch tree and making my way up through the birch scrub, I came out onto a marshy area. Butterflies were certainly not numerous for it was only the second week of June, but I found *P. eunomia* f. *montana*, *C. freija*, *C. frigga*, *E. disa* and *E. pandrose* to be fairly common and all except *C. freija* were quite fresh. On climbing up out of the marshy area, I came across two male *Oeneis bore* (Arctic grayling) and another male *C. hecla*. The sun began to lose its strength as I made my way down the hill, but I managed to net a black and white Skipper, which proved to be *Pyrgus andromedae* (Alpine grizzled skipper).

The morning of the 14th June was sunny but with a little more breeze and there were clouds beginning to well up over the tops of the mountains in the distance to the north-west of us. As I set off to explore the upper part of the hill, which I had not reached the previous evening, clouds were becoming more numerous and, as I climbed, I kept a wary eye on the sky, as this is certainly not a place to be caught if the weather closes in. On the way up I took a fine series of fresh *Hypodryas iduna* (Lapland fritillary), the males of which far outnumbered the newly emerged females. *E. disa* was more frequent around the wet areas near the top of the hill flying with the ever present males of *E. pandrose* and as I wandered along the flat, dry hilltop I netted a rather worn fritillary, which I at first took to be a pale *C. freija*, but it proved, on closer examination, to be my first *Clossiana polaris*, the rarest of the Arctic fritillaries. I was most surprised to find it in such a worn condition so early in the season but the snow had obviously retreated from this hilltop, some 500 metres above sea level, some two or maybe three weeks earlier as it was now only lying in the shaded areas, in the deep gullies and on the

northern slope of the saddle just to the south of us. The season was indeed a very early one but it was apparent from the small numbers of other species that it had not yet advanced enough for the majority to have emerged. The clouds were beginning to obliterate the sun with greater frequency and the wind was beginning to pick up as I worked my way down the hill. After lunch it had brightened up a little and I returned across the stream to the lower slopes and immediately encountered *Oeneis norna* (Norse grayling) flying along the margins of the marsh near the scrubby Dwarf Birches. I took a few more *C. frigga* and a fresh female *E. disa* together with two males in hot pursuit, a fine bag! I stayed around the marshy area near the stream until it became obvious that the best of the day had gone and I was not going to find anything new. However, I had seen some twelve species here, of which half were first sightings for the trip. As I returned to the van the sky became dark and very menacing and within a few minutes a thunderstorm broke and the wind picked up. With hailstones hammering on the roof and the wind gusting up to gale force, I was very pleased to have reached the safety of the van in time. By 17.30 hours the storm had passed over and we could once again talk to each other without shouting. The sun put in a brief appearance, but we decided to retreat from our somewhat exposed position on the hillside and drove very slowly back down the track to the edge of the village; here we parked up for the night in a more sheltered spot out of the wind.

The following morning it was obvious that the weather had finally broken. Thick clouds covered the sky as we drove into Alta to refuel and restock the larder. Whilst taking a leisurely coffee and Swedish pastry, we perused the morning paper to see if we could get any indication of what the weather was likely to do. It did not appear to be very promising but we noted with interest that the day before the temperature in Kirkenes, to the east of us near the Russian border, had reached 28°C whereas in Athens it was a mere 27°C, quite amazing! We decided to utilise this period of inclement weather to follow the tourist trail to Nord Kapp and to this end we set off north-eastwards out of Alta. We stopped briefly in a short spell of sunshine to net a few *P. napi bicolorata* flying over some crucifers by the roadside and then continued on to Porshanger Fjord, turning north to follow the fjord up towards the ferry port at Kafjord. The road was narrow and winding, following the coastline closely, and having driven very slowly through two dimly lit tunnels, we parked for the night on the gravel floodplain of a small stream. The countryside was very bleak up here and we could find no shelter from the wind which continued blowing down from the snow-covered mountains to the west of us. The small group of about 30 reindeer browsing by the van looked much happier than those we had seen before panting in the shade.

After a late start the next morning, we drove on up to the ferry, arriving too late to catch the one which connected with the local bus from Honningsvåg to

the cape. An afternoon of rain sweeping across the car park kept us inside, apart from a brief dash to the souvenir shop to buy some postcards to keep us busy for the evening and a visit to the café on the quayside. The following morning, in low cloud, we caught the ferry, which was delayed for thirty minutes, apparently being unable to detach itself from the loading ramp! After much wielding of large spanners and clanging of sledgehammers we departed; thankfully the wind had dropped a little and the the thirty minute crossing was fairly smooth. Very soon the bus was speeding along the narrow, twisting road and we were very thankful that we had left the motorhome on the mainland. There were long stretches of roadworks where the road was barely wide enough to accommodate the bus, but this did not seem to bother the local driver, who continued over every obstacle at 50mph scattering all in his wake and often overtaking cars towing caravans, struggling over the potholes.

We arrived, white-knuckled, at Nord Kapp in a fine drizzle blowing almost horizontally in the wind. We took a quick look at the bronze globe and snapped the obligatory photograph of each other next to the sphere. Luckily there is now a new, mostly subterranean building on the site and it was nice to get indoors out of the rain. We watched an excellent video of the cape and the surrounding area in its different seasons on a 120° screen with stereophonic sound which made one feel one was almost there in the dog sledge gliding over the snow. The scenes shot from a helicopter in winter hurtling close to the ground past snow-covered ridges and peaks were particularly exhilarating. There was just enough time left to look round the souvenir shop, have a quick cup of coffee and a bun and board the bus ready for another hair-raising drive back to Honningsvåg. After a rougher crossing back to the mainland we hurried off the car ferry and into the van to join the back of the queue of vehicles heading south. The German tourist buses speeding along, at nearly 60mph at times, cleared our path through the tunnels that we had crept through so gingerly on the way up.

In continuing bad weather we drove south to Lakselv and on to Karasjok and then followed the river Tana along the main road north-east to cross the river at Tana Bru, arriving at Kirkenes on the morning of 19th June. This was a busy little town with a street market in full swing. Most of the traders seemed to be Russians, who were using their new-found freedom to get hard currency from both locals and tourists. They were selling everything from chess sets and balalaikas to Russian army badges and cooking pots. Mike succumbed to the persuasive patter of a young lady and came away with a Primus stove which, with the instructions in Russian, I dared him to test with petrol any time within 100 miles of the van! As the rain began again, the traders hurriedly covered their wares and we returned to the van and headed off westwards and then turned south to the Finnish border. Here we were severely rummaged by Customs; the officer refused, at first, to tell us what he

was searching for but it was apparent that he was not bothered by our excess of spirits, wine or cigarettes. Finally, after we had offered him a set of tools to dismantle the entire motorhome, he informed us that he was searching for birds of prey. He told us that only a week previously he had caught two men, unfortunately British, transporting some Peregrine falcon chicks in their motorhome. This had obviously given us "Brits" a bad name and we spent some time chatting with him at the customs house, trying to repair our image. As we headed on towards Inari we caught our first glimpse of the sun for several days but the wind was strong and it was still very cold. We saw no signs of butterflies even in the shelter of some pine trees where we parked for the night beside the Inari lake.

The following morning was much brighter but the wind was still very strong and biting cold as we continued our journey to Kaamanen and then west to Karigasniemi, where we crossed the river Tana to enter Norway once again. In increasing cloud we stopped at Karasjok, taking in the new tourist centre built to resemble a huge Lapp tepee, which contained many small stalls selling a wide variety of souvenirs including Reindeer skins and horns, local silver jewellery and knitwear, all most attractively displayed in this huge wooden building with a copper roof. We left in late afternoon, following the Karasjokka river and then up over the high plateau to Stornes Junction where this road meets the road from Kautokeino to Alta. We turned north towards Alta, following the route we had taken exactly one week before. Having spent the night just north of Masi we drove on to arrive at the Alta river where we booked in early at one of the campsites not far from the river.

Just as we stopped at the office the sun emerged briefly and Mike called to me that he had spotted a butterfly fluttering around in hazy sunshine. I went over, net in hand, to catch our first specimen for several days; it was *Erebia polaris* (Arctic woodland ringlet). A search of the area later on produced a few more males flying over the short grasses, which grew on this very sandy ground.

Having dealt with the pile of laundry and the shopping, we spent a quiet night on the campsite; there were still not many campers about and the site was almost deserted. The weather was still overcast and a visit to the control tower at Alta airport, to make enquiries as to the possibility of more sunshine, did nothing to raise my spirits. However, it was still only 22nd June and so we decided that, with time on our side, we would return to Gagia and sit it out until the weather improved. We climbed up along the Baeskades road and parked at the same spot as before. At about 21.00 hours it began to get very dark and soon it was raining. As we watched from the comfort of the van, what appeared at first sight to be fog moved steadily southwards up the valley towards us; however we suddenly realised, as it reached us, that it was a snow storm! With the temperature hovering around 3°C outside, we closed the

curtains and turned up the heating. By morning the precipitation had ceased but it was still cloudy and not much warmer. We decided to investigate further down the so-called "road" over the Baeskades to see whether we could spot any good looking butterfly localities higher up. The track got rougher and the going became slower until finally we had to halt. We had reached a wooden bridge over a stream and the road on our side had been washed away by the spring thaw. As there was nowhere to turn around, there was nothing for it but to make a start reconstructing the road. The best plan seemed to be to build two ramps wide enough to take our twin rear wheels down to the bottom of the gully and up again onto the bridge; this we did but unfortunately they were a bit too steep and as the van descended the spare wheel mountings were very nearly removed from under the van. With a sigh of relief, as the bridge held our weight, we were across and continued along the track. Having nearly reached the highest part of the road, we decided to stop and finding a convenient hardstanding by the side of Lake Stangvatnet, we camped for the night. Here, at about 500 metres above sea level, it was still very cold and I spent the afternoon watching a Long-tailed skua patrolling the marshy shoreline of the lake. It was obviously watching the Arctic terns, Redshanks and Ringed plovers, all of which were nesting in the immediate vicinity, hoping to make a meal from their eggs or chicks. After the Skua departed I went to make sure the nests that I had found earlier were all safe. They were, with the birds sitting tight in the cold wind, for just a few minutes exposure at this temperature would be enough to kill the developing embryos inside the eggs.

(to be continued)

ANOTHER CASE OF A PSEUDOSCORPION HITCH-HIKER

by Ulf Eitschberger (9126)

Humboldtstrasse 13A, D-95168, Marktleuthen, Germany.

The account written by Danahar in *Bulletin* 50: 277-278 reminded me of a similar situation on 19th June 1989 in my home in Marktleuthen. This was documented in the form of pictures. My son Johannes, who was at that time eight years old, drew my attention to a fly, flying in rather an odd manner. On closer investigation, it immediately became apparent to us, that the fly had a foreign body attached to the rear, left leg. (Plate ZZ Fig. 11). This foreign body turned out to be a member of the pseudoscorpions, which had anchored itself to the upper tibial area (Plate ZZ Fig. 12). In order to photograph the passenger and vehicle, I carefully caught the fly on the window of the living room in a transparent container. This was then placed in the deep freeze at -15°C. Using this method, the pseudoscorpion remained attached to the leg of the fly and could be photographed later underneath the binocular. These two specimens are preserved in my collection, so that determination through specialists is possible at all times.

DRAGONFLIES – FOOD FOR HOBBIES? SOME ANSWERS:

– by Alvin Picknell (10196)

In response to Arthur Cleverly's request for information as to whether hobbies habitually feed on dragonflies (*Bulletin* 53: 70), it may be of interest that the *Hamlyn Guide to the Birds of Britain and Europe* states that the hobby "feeds to a large extent on dragonflies, which are hunted in late afternoon/evening". Also, Subbuteo Natural History Books Ltd of Treuddyn, North Wales, who take their name from the hobby's Latin name *Falco subbuteo*, use a line drawing of a hobby about to seize a dragonfly in mid-air as their emblem.

– by R.A. Eades (9730)

The short note by Arthur Cleverly, *Bulletin* 53: 70, on the behaviour of the hobby, *Falco subbuteo*, describes a classic hunting technique of this magnificent migratory falcon. As he surmises, its prey would doubtless be dragonflies or damselflies, which would be eaten on the wing. The same technique can be used on swallows and other birds.

The hobby is very much an insectivorous bird and migrates in winter to the plains of Africa where it exploits the abundant supplies of insects following the rain fronts. Cramp *et al.* (1980) gives details of pellet contents in England during May and June. The species found were *Saturnia pavonia*, *Macrothylacia rubi*, *Lasiocampa quercus*, *Melolontha melolontha*, *Geotrupes* spp., *Carabus violaceus*, *Bombus* spp., and *Cordulegaster boltonii*. However, in England the hobby also eats numerous insectivorous birds, especially house martin colonies in villages, so its life cycle depends upon insects as the base of its food chain.

REFERENCE

Cramp, Simmons, *et al.* (1980). *Handbook of the birds of the Western Palearctic Volume 2*. pp 320-1. Oxford University Press.

– by Ben Phalan (10160J)

In response to the article by Arthur Cleverly (*Bulletin* 53: 70) which poses the question "Are hobbies predators of dragonflies?", the following may be of interest.

Christopher Perrins, in *Collins New Generation Guide to the Birds of Britain and Europe*, states "The hobby and the red-footed falcon feed primarily on young swallows and martins and also take many large insects such as dragonflies."

In *Birds of Europe*, Lars Jonsson tells us that the hobby "Often hunts dragonflies over marshes and reedbeds on summer evenings." Perhaps they do the canals during the afternoon, and save the marshes and reedbeds for dessert. (Hmmm . . . I wonder if a *Libellula depressa* tastes nicer than an *Anax imperator*!).

Lastly, according to *The Complete Book of British Birds*, the hobby “Often catches insects such as dragonflies in flight, holding them in (its) talons to dissect and eat.”

This is presumably what the hobby in question was doing: swooping down to catch the dragonflies, and then climbing high into the air to eat them. The swallows were probably safe from attack, as the falcon would be too busy staying airborne, and at the same time consuming its prey, to simultaneously hunt them! Which begs the question – why did it bother with dragonflies when there were swallows flying right up to it? Surely a swallow would provide as much food as quite a few dragonflies?

Several other books I referred to named “insects” or “large insects” as being on the hobby's menu, and I recall reading an observation of a hobby returning to the nest with a grasshopper for its mate.

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- Anon. (1987). *The Complete Book of British Birds*. Autmobile Association, Hampshire, Royal Society for the Protection of Birds, Sandy Bedfordshire. (p.137).
 Jonsson, L. (1993). *Birds of Europe with North Africa and the Middle East*. Christopher Helm, London. (p. 156).
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MY FAVOURITE MOTH

by W. Caswell (3133)

My favourite British moth is the Oak eggar (*Lasiocampa quercus*). I suppose the reason for this is that it was about the very first species I ever reared.

Way back in the mid-1950s, a man who ran the CSSM Beach Mission in Northern Ireland, knowing that I was interested in “creepy crawlies” gave me about a dozen young larvae, which were feeding on ivy. These were kept in a glass jam jar (I hope it was the larger 2lb type – but I really don't know!). Every day or two, my Dad would bring in a small bag of fresh ivy leaves on his way home from work.

These larvae surprisingly did very well, and most got through to the adult moth stage, but I don't remember what happened to the moths – I expect my Mum set them free.

Since then, I have often reared this species, and at the AES Exhibition last October, I found someone selling small larvae “very cheaply” – I think I got about 50 larvae for 50p. As they were feeding on ivy (not often used as a foodplant) I couldn't resist! This was in fact an ideal foodplant for the species, as even in mid-winter it is always available. (Such a shame that a lot more species don't eat it!)

According to my book, the larvae “usually hibernate” through the winter, but mine have continued feeding right through the winter, and started spinning cocoons in January, so I am looking forward to seeing the adult moth once again this summer.

IMAGO

by R.H. Heath (8243)

All true beauty is ephemeral,
Short lived it never palls.
Its transience enthral the onlooker,
Its fleeting presence makes one's soul sing.
Reminding one how evanescent,
All things of form are, in a dynamic universe – Know Thysell!

BOOK REVIEW

Insectes de France et d'Europe Occidentale (translated from the *Collins Guide to Insects of Britain and Western Europe* by Michael Chinery). Reprinted 1993, 320pp. Les Editions Arthaud, Paris. ISBN 2-7003-0636-8. Price: 35FF.

Does your entomological French need improving? Being able to communicate the common names of insects to local people, particularly children, may help you with your insect forays in foreign lands. I have certainly found this French translation of Michael Chinery's insect field guide to be useful. The introduction of this book is also helpful in gaining familiarity with a range of French entomological terms. Browsing through the 1993 reprinted copy of this translation one notices a few minor changes to the 1991 English version. More recent taxonomic nomenclature has been adopted, though it would have been useful to have included the former name in brackets alongside the newer version where applicable. A similar criticism can also be made of other updated entomological publications. While some insect orders appear to have equal or near equal abundance of common names (ie. Lepidoptera and Coleoptera) other orders are notably deficient. For example, only nine common names are presented for the Orthoptera (27 in the English version), while only eight are presented for the Homoptera and Heteroptera (38 in the English version). More than anything else this probably reflects a cultural difference: amateur entomology has always had a much wider audience in England than in France. Because of this the traditionally less popular insect orders have been somewhat neglected. As often happens, the French and English seem to prefer to do things differently from each other, which can be a bit confusing at times. I found this to be the case for the Orthoptera, where grasshoppers are known as "criquets" (crickets) while bush-crickets are known as "sauterelles" (grasshoppers)! No additions appear to have been made to the English original and in general the French version represents a faithful translation of Michael Chinery's invaluable insect guide, with adaptations being made for species distribution within Europe generally.

Michael G. Guye

UNSEASONAL STAG BEETLE IN READING

by Maxwell Barclay

While walking down a side road in the residential area of Reading in the early evening of the 27th February 1994, I came upon a large male stag beetle (*Lucanus cervus*). Unfortunately it had been stepped upon, probably having been made lethargic by the cold, but it was certainly fresh, and the exoskeleton had hardened fully. This species is common in the suburbs of Reading in summer, having ample breeding wood because the University keeps a large area of deciduous woodland, known as the wilderness, uncleared.

I looked in nearby gardens for evidence of wood cutting which may have opened the pupal chamber, but found none. If anyone can offer any explanation I would be grateful.

NOTES ON THE WHITE ERMINE AND RUBY TIGER LARVAE

by Frank McCann (6291)

Recently, on Wednesday 13th October, I was walking along a path at Auchinlea Park near Easterhouse when I came across four White ermine moth (*Spilosoma lubricipeda*) caterpillars. These I collected and also noticed another two dead ones which had been trodden upon by people walking the path. I also collected these for examination. Just two days later, whilst walking with a young friend across the grassy fields towards Swinton, I found two Ruby tiger (*Phragmatobia fuliginosa*) caterpillars. These I found under pieces of cardboard which were lying on a grass-covered lane and also near the edge of a field.

The White ermines I have in a wooden cage with a white mesh cloth top; the mesh cotton is covering the open top of the cage. I also put the Ruby tigers in the cage, but I will probably have to separate the two species. The White ermine larvae are feeding on plantain, plus dandelion, buttercup *etc.* which I placed in the cage in small containers with water.

I hope to rear them successfully throughout the winter. The cage is on the verandah window sill which receives a lot of sun during the day, but is cold at night as my house faces south.

SCOTTISH SURVEY OF THE SMALL MOUNTAIN RINGLET

The Small mountain ringlet butterfly is rare in the British Isles and is confined to the mountainous areas in Cumbria and Scotland. Very little is known about the ecology of the butterfly, and it could be seriously affected by changes in climate and habitat management. The Institute of Terrestrial Ecology and Scottish Natural Heritage are organising a survey to investigate this butterfly. If you can help write to Geraldine McGowan, Mountain ringlet survey, ITE, Hill of Brathens, Glassel, Banchory, Kincardineshire AB31 4BY.

MYSTERY MOTH

by W. Caswell (3133)

A couple of months ago, during the autumn of 1993, there appeared on our house what I can only call a "Mighty Mini Moth". I believe it originated from some packed food from possibly Kenya or India.

The moths themselves were very small, similar to our "clothes moth" with dark brown rings. The "larvae" were like those of a "blowfly", only smaller.

The strange thing is that they seemed to eat almost anything edible. Larvae were found in all sorts of things, and they especially liked biscuits, cakes, cake mixes, chocolates, rice, beans *etc.*, and they were even able to chew through sealed bags!

They were extremely difficult to "exterminate", as they just kept popping up in new places.

The "pupae" were often found on the ceiling in corners.

I would normally be quite interested to find out what these were, (though I am not normally interested in such small moths) so if any members have any ideas, I'd be pleased to know!

EYES IN THE DARK

by Jan Koryszko (6089)

During mid-December 1993 one evening just after dark, I was trying my new night-sight monocular in the garden. This is used for nocturnal observations, such as spotting foxes and badgers *etc.* but is very useful for the naturalist in general.

I pointed my monocular at my garage doors and I noticed a moth sitting on them. I would not have seen it with the naked eye. Although the image was not good enough to identify the moth, I could see what a useful aid it would be for the entomologist. It is quite good when pointed down to the ground. You can see quite clearly; useful for beetles and other night insects. I am looking forward to trying it out during the summer evenings.

I managed to capture the moth on my garage doors. It was a December moth (*Poecilocampa populi*), not an uncommon Staffordshire moth, but a first to visit my garden. The last specimen I saw was at a street lamp close to Western Sprink Wood during December 1992.

A SECOND BROOD OF THE ORANGE TIP (*ANTHOCHARIS CARDAMINES*)

by John Payne (5923)

During late December I looked at my pupae in the fridge, and was shocked to see that a female at some early time had emerged, even in that low temperature. Not knowing of any records of a second brood, I wonder whether a second brood could be induced, and whether any member has had the same experience.

D.J. & D. Henshaw

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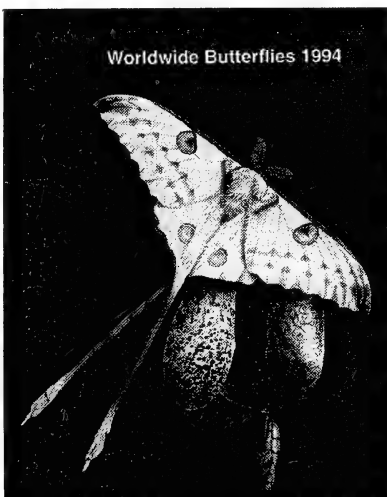
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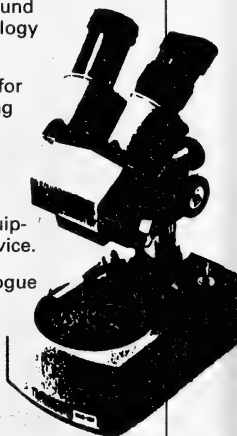
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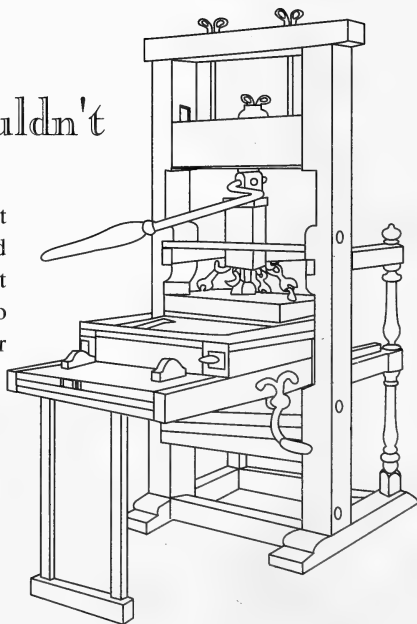
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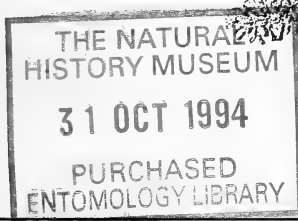
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AES BULLETIN

No. 396



EDITORIAL

In this issue of the *Bulletin* we include the relaunch of *Invertebrate Conservation News*. This will be appearing in every other issue of the *Bulletin* from now on. We are still experimenting with the format of this, and so hopefully, over the next few editions, we shall be able to make some improvements.

The next issue of the *Bulletin* will be the last in its present format. Coinciding with our 60th anniversary next year, we have decided to modernise its image. This will include a colour cover and new features such as a "problem" page for all those things you've always wanted to know, guest articles and an events section. Any member with other suggestions or questions they would like answering should drop me a line.

I am pleased to welcome Professor Ted Benton on behalf of the Society, as our new European butterfly advisory panel member. Ted, who is particularly interested in *Erebia* sp. may be contacted at the Department of Sociology, University of Essex, Wivenhoe Park, Colchester CO4 3SQ.

Belated thanks go to Reg Fry, who was treasurer of the Society up until the April AGM. He has worked tremendously hard over the years, and we hope he continues to do so whilst he remains on the Council. He is replaced by Andrew Lock. Also leaving us is Caroline Willmott, who is to spend a year in Canada. Wants and Exchange adverts should now be sent to Owen Lewis. Finally, goodbye to Duncan Reavey, who has recently left York to work in South Africa. Duncan has undertaken a huge workload during his stay with the Society and we wish him every success in the future.

LOST AT THE EXHIBITION

Set of car and house keys.

Small red make-up case, inside are various items of make-up.

Please contact Roy McCormick

RE-INTRODUCTION OF THE MARBLED WHITE (*MELANARGIA GALATHEA* L.) TO DONCASTER

by W.E. Rimington (5269)

8 Riverside Drive, Sprotbrough, Doncaster, South Yorkshire DN5 7LE.

Until recent years few subjects in entomology could be more certain to raise the temperature than that of introduction or re-introduction. Reasons given by opponents of artificial release are usually that the practice is unnatural and that it distorts normal recording.

Recently, (Rimington, 1986) I published an article describing the re-introduction of the Speckled wood to a locality at Doncaster and very briefly discussed some of the arguments. I expressed the view that recording, to the exclusion of planned re-introduction, amounted in the final analysis to monitoring an inevitable decline. The reaction that I received to that article showed just how contentious the issue then was. It is however now true to say that opposition to artificial release has softened, due without doubt to the realistic and sympathetic views expressed by – amongst others – J.A. Thomas and M.G. Morris (Emmett & Heath, 1989). It is only necessary here to reiterate that there are sensible limits to the practice and sensible procedures which should be followed. Interested readers are recommended to consult the above work.

Historical Background

The local history of the Marbled white is described fully in *Butterflies of the Doncaster District* (Rimington, 1992). Briefly it was recorded or mentioned on a number of occasions, sometimes in profusion, between the years 1832 and 1896 at several sites on and about the narrow band of magnesian limestone which runs north to south immediately to the west of Doncaster. The time of and reasons for its local extinction are uncertain. However, Ecroyd (Newman 1870) said that the “abundant” Melton/Marr colony fell to the plough but local expert John Hawley (1866) described its loss as “unaccountable”. A number of species underwent retractions in northern districts during the later years of the nineteenth century including several of the “browns”, all of which, with the exception of the Marbled white, have since returned, if occasionally temporarily, to their Doncaster haunts. These retractions were most probably due to climatic deterioration and I believe also to the appalling atmospheric pollution which affected South Yorkshire then and for many years subsequently.

The Marbled white

This is a species almost restricted today to southern England where it is sometimes abundant. A few colonies are found in Wales and an isolated but healthy group of colonies is found on the Yorkshire Wolds. It favours south-facing chalk or limestone slopes but will colonise roadside verges and occasionally open woodland. Its curious behavioural characteristics include ignoring seemingly ideal sites and an ability to exist at very low population density in the same site for years, these characteristics being referred to in

Heath, Pollard and Thomas (1984) and Emmett and Heath (1989). It appears to favour tall but hardly dense grassland which is well stocked with tall-growing nectar plants such as various Compositae, scabious, knapweeds and thistles. I have successfully reared the butterfly on a variety of grasses but cannot comment on its supposed requirement for red fescue grass (*Festuca rubra*) (Thomas 1992).

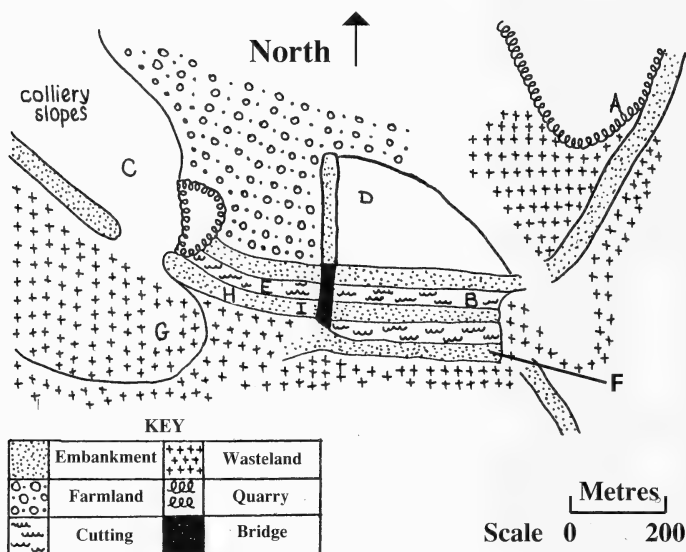
The Habitat Area

The immediate area selected for release consists of used and disused limestone quarries, several disused railway cuttings and embankments and natural south-facing slopes. Bordering this area are woodland, cultivated fields, a large rough uncultivated field, scrubland and extensive wastelands including the now extremely attractive site of an abandoned cleared colliery. The general area extends roughly 1300 yards through the limestone from west to east and is about 60 acres in extent (see Fig. 1). Hopefully its future is assured as a result of conservation agreements reached very recently. Dominant grasses are tor grass (*Brachypodium pinnatum*) and false-oat grass (*Arrhenatherum elatius*), these being discontinuously dense and well-broken by typical limestone flora which includes tall nectar plants mainly of the species mentioned earlier. I believe red fescue to be present but probably not in large amounts. In places on the embankments and cuttings the flora is sparse and dry and other encroaching scrub will soon be a problem. Overall this is an attractive limestone area.

In former years various localities on and about the Doncaster limestone were the haunts of a rich butterfly fauna which included all of the fritillaries, with the exception of the Heath fritillary, the Small and Silver-studded blues, Grizzled skipper, Purple hairstreak and Large tortoiseshell, all of which are now thought to be extinct locally.

Release Sites and Methods

Initially two sites were selected. The first, quarry site (A), was situated in a large partly disused quarry at the eastern extremity of the area. This small one to two acre site contained attractive south-facing slopes, wasteland and sheltered pockets bordered by scrub, woodland and open quarry. The second, cutting site (B) consists of several adjacent cuttings and embankments of mixed suitability, some being sparse and scrubby, some beautifully attractive. This site is generally contained by wasteland and scrub and on its northern border by the large rough uncultivated field (D), already referred to. Cutting (F) and its southern embankment peter out into wasteland at the bridge although cutting (E) and its embankments, now becoming barren and scrubby, continue to the western end of the monitored area. Much of this western area comprises colliery wasteland (G). This is richly and beautifully carpeted with Compositae, vetches, trefoils and various other plants. On its northern border is a superb south-facing grassy slope-colliery site (C). This



SITE CHART

A – Quarry Release Site
 D – Rough Field
 G – Colliery Wasteland

B – Cutting Release Site
 E – Cutting & Embankment
 H – Embankment Site
 I – Embankment Site

C – Colliery Release Site
 F – Adopted Cutting

Figure 1. Site Chart – Rimington

site was belatedly added to the scheme in late 1987. The area, amazingly, is historically unrecorded for butterflies but lies less than two miles away from the former site of the Melton/Marr colony.

In July 1985 ten females were taken from Burdale on the Yorkshire Wolds. Over the next few days about 250 eggs were laid. While still relatively fresh the adults were released in the quarry and cutting sites and in early September the young larvae were distributed equally in each site. No plans for a further release were made.

Site Monitoring

Site visits during the potential flight period were usually possible on about eight or nine occasions per season but not in every week. According to my friend Maurice Jackson, Yorkshire Lepidoptera recorder, the normal extremes of the flight period of *galathea* in Yorkshire are late June to late August. Doncaster emergences are however often surprisingly early and site visits were planned to commence around mid-June.

In the absence of a standardised monitoring procedure, recording and notations were unavoidably approximate and arbitrary. The accompanying chart (Figure 2), which is intended only to be an “at a glance” aid, is

	June			July				August	
	8 - 15	16-23	24-30	1-7	8 - 15	16-24	25-31	1-7	8 - 15
1986	—	✱	— 27/6	E 5/7	C	E	C	E 3/8	— 9/8
1987	— 12/6	— 18/6	✱	E 3/7	C	✱	✱	E 4/8	✱
1988	✱	✱	D 29/6	✱	C	C	✱	— 6/8	— 9/8
1989	— 9/6	C 20/6	✱	B	✱	C	✱	E 7/8	✱
1990	✱	— 17/6	C	C	B	C	✱	E 5/8	✱
1991	✱	— 16/6	C 25/6	✱	B	C	B	E 3/8	— 13/8
1992	✱	B 22/6	✱	A	C	D	E	— 6/8	— 16/8
1993	— 13/6	E 20/6	C	A	A	E	✱	E 3/8	— 8/8

Figure 2.

A = Abundant,
4 - 5+ specimens seen
in flight together.

B = Excellent,
2 - 3 specimens seen
in flight together.

C = Good,
single specimens seen
every 1- 5 minutes.

D = Reasonable,
single specimens seen
every 6- 15 minutes.

E = Present,
single specimens seen
very occasionally.

— = No sightings

compiled mostly from records taken from around the cutting sites (B) and (F). Only the highest reading in any one week is given. All-in-all and despite the shortcomings of the system I believe it provided an interesting and reasonably informative account of population movements and numbers since release in 1985 and also of certain aspects of the behaviour of the butterfly.

1986. The first year: Visits commenced in the second and fourth weeks of June but with no sightings, the first record occurring on 5th July. Sightings were "good" if unspectacular for most of July at both release sites (A) and (B) and the final example was seen on 3rd August. No butterflies were seen very far from the release sites. An unremarkable start to the project but the sight of this most beautiful species in flight on the Doncaster limestone for the first time in one hundred years was a great thrill.

1987, '88 & '89. Unfortunately the next three years were difficult personally and site visits were somewhat restricted; nevertheless a pattern began to emerge.

1987. No visits were made in the crucial final week of June. The first occasional examples were seen on 3rd July, numbers reaching a level of "good" in mid-July at sites (A) and (B) with the final sighting on 4th August. Again, sightings were generally restricted to the release sites and certainly none were made anywhere near to the highly attractive colliery area. At this stage I decided to introduce the butterfly to site (C). About 100 larvae were laid down in September, again from Burdale stock.

1988. The first examples occurred on 29th June in reasonable numbers and had obviously emerged some days earlier. Numbers peaked around mid-July and were generally better than in 1987 around both sites (A) and (B). Visits on 6th and 9th August yielded no sightings. Very occasional examples only were seen at the newly-introduced colliery site (C). Again none were seen down the scrubby cuttings and embankments (E), the butterfly continuing to appear generally reluctant to spread.

In the winter of 1988 disaster occurred at quarry site (A) which was virtually destroyed by tipping and excavation. Waste was also tipped on and around site (B), both sites appearing to have been selected as if by some malign intent. 1989 was therefore awaited with a mixture of disappointment and curiosity.

1989. The first examples were seen on 20th June at a level of "good" indicating an emergence around mid-June, the final sighting occurring on 7th August. Following the tipping on site (B), to my relief I observed the butterfly in "excellent" numbers on 5th July down an attractive stretch of cutting (F) and its immediate embankment, these being some 150 yards in length and adjacent to cutting site (B). Unfortunately, quarry site (A) was reduced to mud and dust thereafter yielding only very occasional examples around its scrubby borders. Sightings at site (C) were again disappointing while the relative indifference of *galathea* to a superb south-facing stretch, (I), of embankment seemed unaccountable. This stretch of embankment is a continuation of the successful cutting (F) embankment only 100 yards distant. The two spots are separated by dense scrub, uninteresting wasteland and barren scrubby cutting (E) down the length of which butterflies were never seen to venture. To the eye however, this hardly seemed an obstacle to movement let alone the colonisation of a site as suitable as embankment stretch (I) seemed to be.

1990-92. In 1990 and 1991 several examples were seen on 25th and 26th June respectively, indicating emergence around 20th June or earlier while in 1992 multiples were observed on 22nd June indicating emergence perhaps around 16th or 17th of the month. The sighting on 3rd August 1991 proved to be the only August sighting in the three years, a finding which I do not consider representative as second week visits were not made in August 1990 and were perhaps rather late in 1991 and 1992.

Numbers improved generally over the three years with multiple sightings becoming a feature. Single examples were more frequent about the colliery slopes but not until 7th July 1992 do I recall seeing two simultaneously there. Cutting (F) and its embankment continued to thrive but embankment stretch (I) remained disappointing and cutting (E) was still quite rejected. In 1992 I re-examined the secluded and attractive top of cutting (E) and was pleased to see several butterflies including several multiples. These however seemed to show little interest in venturing down the sparse embankment sides to the cutting below. As before no interest was shown in the nearby rough field (D).

1993. Occasional sightings occurred on 20th June, again indicating early emergence. Numbers peaked from early to mid-July with the last sighting on 3rd August.

Numbers were significantly increased at the very attractive colliery wasteland and on 6th July on an adjacent restricted strip of embankment (H) were more abundant than anywhere else in the entire area. However, the butterfly remained mystifyingly "shy" of the superficially ideal colliery slopes and embankment stretch (I). Field (D) again appeared to be utterly ignored. On the other hand, for the first time, a few butterflies were seen down cutting (E) and on its bare northern embankment.

Very few visits had been paid to the destroyed quarry site (A) since 1989, in retrospect a mistake, since the scrubby borders may yet contain pockets of this sedentary butterfly.

Afterthoughts

It now seems reasonable to assume that the Marbled white is successfully established in this locality and that the potential limits of the flight period here are mid-June to mid-August, the usual probably being about 20th June to 5th August.

The somewhat unpredictable behaviour of *galathea* in terms of spread, population density and site selectivity have been noted by other workers and were referred to earlier. The similar tendencies noted during this project and described in the site monitoring accounts were particularly interesting as the butterfly sought to establish itself. The sedentary nature of the Marbled white is also indicated by the fact that not a single example was reported from either of the two nature reserves which lie within half a mile of both western and eastern extremes of the monitored area.

I offer no explanations for the behavioural characteristics of the butterfly beyond observing that wherever I have seen it from Yorkshire to Sussex and Dorset it seems to be happiest where the grass is knee to thigh high, contains tor grass – on which I have found larvae – and tall nectar plants in the general absence of scrub. Interestingly the rejected field (D) was dominated by waist high false-oat grass.

In 1989, after inspection of the release area, my friend Mike Lockwood undertook to release *galathea* at a limestone site some fifteen miles to the north. The area is well known to Yorkshire naturalists and there are ancient records for the vicinity. In 1992 I observed the butterfly in satisfactory numbers there and am informed that it has since strengthened its position and spread to suitable grassland some 300 yards distant. In 1991 Mr Lockwood also released the butterfly near to the site of an earlier but short-lived re-introduction situated a mile or so away, this site also carrying ancient records for *galathea*. The butterfly was apparently seen on the wing there in 1993 but as yet remaining close to the release spot.

In 1985 an introduction took place at a limestone locality near to Worksop where I believe the butterfly continues to fly. Contrary to local belief the writer is in no way connected with this release or with the methods used or with the undeclared release of several other species at this site.

The readiness with which the butterfly has taken to these sites surely vindicates sensible attempts at re-introduction or introduction not only of the Marbled white but also of other species. An excellent example at Doncaster is the Small blue for which there are a few local records dating back to around 1850. Kidney vetch thrives here on the very same limestone banks which now support the Marbled white and the area "cries out" for an attempt to re-introduce this charming and locally long-lost species. In the early summer of 1993 I attempted to capture stock for such an attempt from healthy colonies about the Eastbourne and Lewes Downs but was shocked at the almost total lack of both adults and ova in the sites visited and had to abandon the attempt.

Since I cannot guarantee to visit productive colonies in early summer I would be most grateful for assistance in obtaining stock. If anyone can assist me in this cause I would be most grateful.

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- (Editor's note:- I wrote to English Nature for a reaction to this re-introduction after a similar article some years ago on the Speckled wood caused considerable debate. However, I have yet to receive a reply and feel that it is unfair to hold back the article any longer.)

GREGARIOUS BEHAVIOUR IN THE FIREBUG

by Michael G. Guye (10024)

624 Villagrains, 33650 Cabanac, France.

I was interested in John Hay's recent article (February 1994) concerning the firebug (*Pyrrhocoris apterus*). This insect is abundant in my back garden here in the region of Bordeaux, and is known locally as "gendarme" (policeman). A common sight on a mild, sunny winter's day is the "clumping" together of several individuals on the exposed sunny side of old tree stumps, particularly on one which has been charred by fire (Plate DDD, Fig. 7). Sometimes they climb up onto the bird table and feed on wheat grains that have become swollen with moisture.

THE ODONATA OF MILTON COUNTRY PARK

by Don Madin (10023)

32 Kinross Road, Chesterton, Cambridgeshire CB4 1QY.

After some twenty years of discussion and planning, the conversion of old gravel pits at Milton, Cambridgeshire into a country park started at the end of 1990 and the park opened in May, 1993.

Methods

Studies of the Odonata were carried out during a series of visits, extending from well before the period of work on the site. Observation of adults in the field was by using a close focus 8x20 monocular together with subsequent examination of photographs, while finding exuviae on emergent vegetation, ovipositing females or the presence of larval stages as shown by pond dipping was taken as confirmation of breeding. Identification was checked by reference to Hammond (1993) and McGeeney (1986).

Results

SPECIES		BREEDING
<i>Ischnura elegans</i>	blue-tailed damselfly	Confirmed
<i>Enallagma cyathigerum</i>	common blue damselfly	Confirmed
<i>Lestes sponsa</i>	emerald damselfly	—
<i>Pyrrhosoma nymphula</i>	large red damselfly	Confirmed
<i>Aeshna cyanea</i>	southern hawk	—
<i>Aeshna grandis</i>	brown hawk	Confirmed
<i>Aeshna mixta</i>	migrant hawk	—
<i>Anax imperator</i>	emperor dragonfly	—
<i>Orthetrum cancellatum</i>	black-tailed skimmer	Confirmed
<i>Libellula depressa</i>	broad-bodied chaser	Confirmed
<i>Sympetrum striolatum</i>	common darter	Confirmed

While all of these species were recorded during 1993, the number of individuals was not as great as in the previous two years.

Discussion

By chance, the method of excavation of some of the lakes at Milton was similar to that shown by Giles (1992) to be the ideal for the subsequent development of a varied range of wildlife. This, together with management which produced a broad spectrum of habitats suitable for invertebrates, has resulted in a dragonfly population which already compares favourably with the expected 14 or so species regularly found in the vicinity of gravel pits (Moore 1990). This could be expected to improve over coming years.

Reduced numbers of individuals were seen in 1993, possibly associated with a summer which was wetter and cooler than in the previous two years. An additional factor lies in the greatly increased sightings of the hobby (*Falco subbuteo*) over North Cambridgeshire and adjacent areas, including the Country Park. Dragonflies form an appreciable proportion of the prey of this raptor and such a correlation would be in accordance with the findings of Prince and Clarke (1993).

Acknowledgments

I would like to thank Mr Tony Leadley of South Cambridgeshire District Council for permission to visit the site during the construction stage and Mr Malcolm Busby, Chief Ranger of Milton Country Park for his interest in the study.

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BOOK REVIEW

Provisional atlas of the lacewings and allied insects (Neuroptera, Megaloptera, Raphidioptera and Mecoptera) of Britain and Ireland by Colin Plant. 203pp. ISBN 1 870393 18X Biological Records Centre 1994.

The lacewings, alderflies, snakeflies and scorpionflies have traditionally been studied together. This new work by Colin Plant looks at the distribution of those species which are found in Britain and Ireland.

The book summarises the results of the lacewing recording scheme carried out between April 1988 and November 1992 by the author and the Biological Records Centre. The book begins with a brief description of the survey and how the various species were identified. This is followed by the species' accounts and distribution maps. Each species recorded has its own map and notes on its status, habitat requirement, collecting methods and phenology. This gives a comprehensive survey of our British species.

The book is far from eye-catching, but the content between the covers more than makes up for this. It is written in a clear format and although a few illustrations would have added some interest, it is undoubtedly a book which is well worth a look.

Wayne Jarvis

The First Creepy Crawly Roadshow is to be held at the Yorkshire Museum, Museum Gardens, York YO1 2DR on Sunday 30th October. This will consist of a mixture of Traders and Exhibits by Specialist Societies. Anyone requiring further details should contact Paul Howard on 0904 629745.

GREY DAGGER: A LARVAL FOODPLANT

by *Graham Owens* (8687)

Some years ago, I found a Grey dagger (*Acronicta psi*) larva feeding on laurel. At the time I was interested in the larva rather than the foodplant but knowing how toxic laurel is, I am surprised that it became fully grown on this diet. The caterpillar is illustrated in Plate CCC Figs. 4 & 5.

EARTHWATCH EUROPE CALL FOR RESEARCH PROPOSALS

Earthwatch Europe invites proposals for field research for inclusion in its 1996 or 1997 programmes. Earthwatch supports basic and applied field research at post-doctoral level in the Life, Earth and Human Sciences and encourages interdisciplinary proposals. The proposed fieldwork must be labour-intensive and able to make good use of teams of non-specialist field assistants drawn from the membership of Earthwatch. In the past they have assisted with fogging, light trapping, collecting, sorting and identifying arthropods, in Peru, Australia and Ecuador. As well as providing volunteers, Earthwatch awards grants to projects included in their programme. The size of the grant varies according to the number of volunteers required to carry out the project; it is financed from contributions made by these volunteers and awarded on a per capita basis, on average £550 per volunteer. Total grants paid to Principal Investigators range between £7,000 and £10,000. The grant should cover the cost of accommodation, local transport and food for the volunteers during their field activities – volunteers pay for their own travel to and from the rendezvous point. The Earthwatch grant also covers travel to and within the site by the Principal Investigators – any sum remaining after these costs have been met is available to support other field research costs. Earthwatch takes into account the scientific strength of each proposal when awarding grants as well as the numbers who are likely to volunteer for that project.

Earthwatch wishes to encourage research concerned with understanding processes which shape the environment at the local, regional and global level, projects that contribute to improved management of threatened habitats and ecosystems, research on biodiversity and studies that identify sustainable use of natural resources. All proposals are subjected to rigorous peer review.

Preliminary proposal, in English, for fieldwork in spring and summer of 1996 are requested **before Friday, 20th January, 1995.**

Please write for further details to: Dr John Craig, The Science Director, Earthwatch Europe, Belsyre Court, 57 Woodstock Road, Oxford OX2 6HU, United Kingdom or telephone Oxford (0865) 311600.

BOOK REVIEW

The butterflies of Berkshire, Buckinghamshire and Oxfordshire by Jim Asher. Hardback, 136pp., 120 colour photographs. ISBN 1 874357 021. Pisces publications 1994. £18.95.

This excellently presented text is the latest butterfly book to reach the bookshelves. Based upon six years of recording by the Upper Thames Branch of Butterfly Conservation, this book looks at the distribution and life cycles of the species found within the three survey counties.

The book can roughly be divided into four sections. The first, the introduction, deals with the life cycle of butterflies in general and the key habitat types found within the survey area. Secondly, the project is explained, detailing how the six years of recording were undertaken so that the whole of the survey area was covered at some time during the study. This leads nicely into the main section of the book which deals with each species encountered within the three counties. This contains colour distribution maps, flight period diagrams and brief descriptions of the ecology and status of each of the 48 species encountered. Illustrated by colour photographs of habitat, adult and larval life stages, this section is very good, especially for a more general read. Tagged onto the end of this is a small piece on parasitoids and parasites, which are so often overlooked in such a book. The final section looks at habitat conservation and management and also, usefully for those who do not know areas in the counties which are butterfly rich, where and when to see butterflies.

This book will undoubtedly be of use for many years due to the simple fact that the detail and size of the recording areas are so good. It is also of use in determining the present status of our butterflies, and will be a valuable reference in the future.

The book, despite being rather expensive, is easy to read and is very attractive. Well worth a look.

Wayne Jarvis

SWALLOWTAIL LARVAE ON GROUND ELDER

by Trevor Sampson (8016)

Members breeding *Papilio machaon gorganus* might be interested to know that the larvae feed well on Ground elder. I've been plagued with it for years and never thought I'd find myself "potting it up" but now I have the fourth generation of Swallowtails flying and healthy all reared on it. I should add that after the eggs are hatched on fennel I transfer the larvae, so if one runs out of fennel, ground elder fills the bill.

SOME UNUSUAL OBSERVATIONS OF THE GREEN-VEINED WHITE (*PIERIS NAPI* L.)

by Peter Tebbutt (7941)

On a lovely warm August day in 1992 my attention was drawn to a white butterfly that was flying in my garden. A closer inspection revealed a female Green-veined white, a rather unusual visitor to a town garden. Its heavy flight gave the impression that it was looking for a suitable site to oviposit, but it was totally ignoring any of its known foodplants that were at least ten to twelve feet away.

To my amazement it alighted on some aubretia that overhung the rockery and, curling its abdomen under a leaf, proceeded to lay a single ovum. A much closer look revealed not only several more ova but also two larvae. The larvae were removed and kept on cut aubretia which they readily took. However, after about a week I decided to return them to the garden as the cut plant rapidly dried out and became unacceptable. The larvae were by this time easily recognisable as Green-veined whites.

Much is often said about the voltinism in this species, and it is often accepted that only a percentage emerge as a second brood, the remainder staying as pupae until the following spring. This may be even more complex, as I found while rearing the Scottish subspecies, *P. napi thomsoni*. Only a very few emerged in the summer, and on at least one occasion no pupa produced the second brood. I must stress that I was only rearing about 50 larvae at a time, so that the sample number was quite small, any surplus material being given to fellow enthusiasts. Each batch of pupae was kept separately which is how I managed to make the following observation. A batch of approximately two dozen pupae produced only two summer examples, the rest going through the winter when I lost three pupae. The remainder all emerged the following spring except for one healthy-looking pupa. This produced a butterfly in August, so completely missing out one summer and spring and emerging in its second summer.

Once a Green-veined white has coloured up in the pupal case I have found it rare not to get a successful emergence, with one very notable exception. A male had coloured up but a week later had still failed to emerge. It was now somewhat extended and appeared to be dead. It also had a yellowish look about the wings, and I thought this may have been caused by the pupal case. I was later surprised to find a male crawling around the emergence cage with most of the pupal case still attached to its abdomen. This had obviously caused it enough distress to prevent it inflating its wings in time. Very carefully I removed the pupal case but the crucial period had elapsed and I had no choice but to later destroy a rather pathetic-looking butterfly with its very small un-inflated wings. The reason for my disappointment was that these wings were bright chrome yellow, the only one I have ever had that showed this very rare coloration. Why is it that the choicest specimens always finish up crippled?

BEGINNINGS OF AN AMATEUR ENTOMOLOGIST AND INSECTS IN SOUTH-WEST FRANCE

by Michael G. Guye (10024)

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Entomology (and arachnology) has always been an interest for me as far back as I can remember. One of my earliest childhood memories of entomology was hunting for insects in my parents' small suburban garden, in south-east London, equipped with an *I-Spy Book of Insects*. My father tells me that when I was two years old I would watch the ground closely for earthworms as he dug the garden soil. When one was spotted I would exclaim "Missum Wum". Evidently, from then on, I was a great collector of almost everything small which moved, amassing glass jam jars in my bedroom, and in other odd corners of the house, much to my mother's annoyance. At six years of age I remember taking an entire black-ant nest to school for the nature-table display and being asked to give a brief talk about it to the other children (my first scientific seminar!). I remember the great feeling of disappointment when the appointed time came for my demonstration talk as I was not able to find the queen ant, which had decided to bury itself in the depths of the soil-filled box. At seven or eight years of age I remember taking a large and somewhat overfed female *Tegenaria* spider to school which captivated a rather large audience, particularly at feeding time. Unfortunately its oversized taut abdomen could not take the shock of being accidentally dropped onto the classroom floor. My fascination for arthropods continued until my early teens. Even as a teenager I maintained a general interest in natural history, though my interest in entomology was far less intense than in earlier years. Reasons for this? Well, I think one reason was certainly not wishing to appear too eccentric to my other teenage companions! At 12 or 13 years of age a hobby in vegetable gardening was already considered somewhat marginal for most of my friends. Like most teenagers, I did not want to appear too different from my companions and so suppressed my more eccentric entomological endeavours. And besides, beautiful girls had a somewhat greater allure than firebugs, bloody-nose beetles and the like.

After working in industry for two years I went on to university to study the plant sciences. I ended up with a doctoral thesis which examined the physiology of plants in stressful environments. I then went on to spend some years in postdoctoral research on this subject in France and North America. In the absence of any permanent research job on the horizon and the temporary nature of postdoctoral positions (normally between one and three years) combined with the increasing pressure to publish as much as possible, one pays a price for such a precarious and intense existence. In 1990 my wife Anne, Jimmy (then four months), and I returned to Europe from Canada. Anne, who is of French nationality, obtained a permanent post in the French civil service with the Institut National de Recherche Agronomique (INRA). I

am now self-employed as a scientific consultant, editor and translator with the occasional research contract with INRA. We live in the south-west of France, 40km due south of the centre of Bordeaux.

My new-found lifestyle here in France has left me with the luxury of "spare time", particularly now that our 90-year-old house is renovated into a livable condition, and the boys (Jimmy and our second son, Lucas) have each passed the ever-demanding first year of their lives. With some free time on my hands, and a 0.73 hectare (1.7 acre) garden that is particularly rich in habitats (eg. a small woodland comprising oak, willow, alder and false-acacia, a damp and sometimes marshy acid-soiled meadow, and dry sunny south-west facing slopes) my interest in entomology has been reborn.

When we bought the house and land here in July 1991, the meadow and slopes were an impenetrable tangle of brambles and horsetails measuring between one and two metres high, shaded by numerous large 70 to 80-year old false-acacia trees growing next to our house. Insect-wise there did not seem to be much going on at that time, and anyhow even if there was the vegetation was so dense and prickly that I couldn't do any insect-hunting.

For reasons of safety for the house, the false-acacias (up to 25 metres high) were cut down. The brambles were attacked with a pair of garden shears and regular scything during 1991 and 1992 finally finished them off. The previously shaded impenetrable tangle then gave way to an open sunlit profusion of wild flower and grass species. A diverse range of insect species then followed rapidly.

Of particular excitement is the fact that some of these species include breeding populations of insects which are now on the French national list of protected insects eg. *Mantis religiosa* (praying mantis), *Paracinema tricolor* (a grasshopper), *Lamia textor* and *Cerambyx cerdo* (longhorn beetles), *Lucanus cervus* (stag-beetle), and *Eurodryas aurinia* (Marsh fritillary butterfly). Other interesting finds include *Clonopsis gallica* (stick-insect), and in the village I have found *Oryctes nasicornis* (rhinoceros beetle).

The garden appears like an oasis, with the insect and plant diversity it offers, against the apparent monotony of the surrounding maritime pine plantations of this region. These plantations extend from the outskirts of Bordeaux to the Spanish border and represent the largest area of artificial forest in Europe. The general forest ecosystem undergoes frequent ecological upheaval: the forest floor vegetation is cleared periodically by tractor (normally once a year) and trees undergo a regular harvest cycle of between 40 and 70 years. The result of this, together with the generally species-poor characteristics of conifer forests, means that few insect species of interest get established. Well, that is certainly a first impression. However dotted throughout the pine plantations are areas which are unexploitable: marsh or pond areas surrounded by a narrow margin of vegetation which may include

willow and oak. These may provide safe-havens of ecological continuity and may offer some interesting finds although I have not yet investigated this possibility. Thankfully some of the width of many roadside verges in the area escapes the battering of grass-cutting equipment so at least one other insect habitat remains partially intact.

I joined the AES last year. Since then I have thoroughly enjoyed reading the *Bulletin*, and hope, in the near future, to make regular contributions to this publication (it is also a way of maintaining contact with "home"). Such contributions may include any information I have concerning French entomological societies, meetings, etc, as well as any news concerning insect life in my corner of south-west France. My present interests include attempts at breeding, and general observations of, various garden insect species. Eventually, in the more distant future, I hope to carry out detailed studies on the effects of different environmental parameters on the behaviour of these species under both field and controlled environments.

I think I have already earned myself a bit of a reputation, here in the village of Villagrains, since children arrive on our doorstep from time to time with insects for me to identify. Jimmy and Lucas also share my interest in insects and natural history in general.

Any AES members passing through the area are welcome to drop in for a cup of tea. It is good to speak English with a fellow countryman from time to time and have any news of "home"!

UNCLE PADDY'S MAGIC BUCKET

by L.M. O'Brien (9145)

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For as long as I can remember, Uncle Paddy has enthralled me with his stories of breeding and collecting butterflies and moths.

His enthusiasm for the subject of Lepidoptera, and in particular silkmoths, has not only myself but everybody who listens, standing in awe.

One story in particular I can recall, is his attempts at breeding the Giant atlas moth (*Attacus atlas*). He had managed to purchase himself a dozen cocoons. These he placed on top of the kitchen cupboard, tending to them daily. One day on returning from work, he was met by my aunty's cries of "There's two bloody great big moths flying around the kitchen". With this, he raced into the kitchen and there before him, resting on the wall, were two "Fantastic Bugs", one female and one male. Being a man of simple means, he would be the last person to equip himself with the latest breeding cages. So, standing in the corner of the kitchen was a red bucket. "It would do," he thought (Plate DDD, Fig. 6). Leaving the two moths overnight in the bucket brought more surprises, 200 eggs, all fertile!

From that day to this, Uncle Paddy swears by his "Magic Bucket".



Fig. 1. The editors: old and new.

PLATE AAA



Fig. 2. *Orthetrum cancellatum*, at Milton Country Park, Cambridgeshire.



Fig. 3. The damselfly, *Coenagrion puella*.



Fig. 4. Grey dagger larva on laurel.



Fig. 5. Grey dagger larva, *Acronicta psi*.



Fig. 6. Uncle Paddy's Magic Bucket with a pair of Giant atlas moths (*Attacus atlas*).

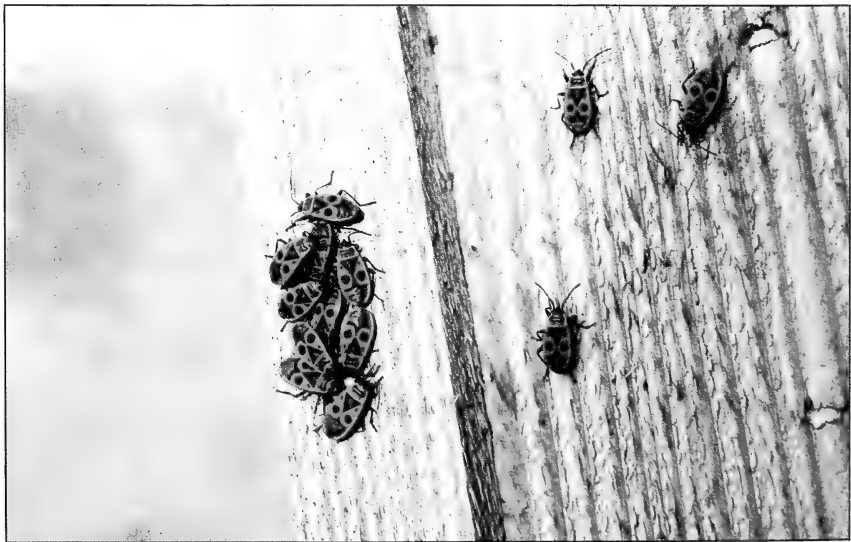


Fig. 7. "Clumping" in the firebug (*Pyrrhocoris apterus*).

BUTTERFLYING IN SCANDINAVIA, SUMMER 1992

by P.J. Russell (8977)

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(continued from page 187)

On the morning of the 24th the sky began to show signs of clearing from the west and, under an increasingly blue sky, I set off round the edge of the lake and up the wet slopes on the far side. Looking back at the lake, I could see that the snow in the gullies stretched out under the waters of the lake like miniature glaciers. I was soon into an area of scrubby tundra, with some fritillaries flying; these turned out to be a new species for the trip, *Clossiana chariclea* (Arctic fritillary). Encouraged by the substantial clearance in the weather, I set off after lunch to hike across the tundra and climb to the top of the hill on the skyline to the south-west. Having crossed the open wet ground and scaled the still snow-covered slopes, all of which were devoid of butterflies, I reached the flat summit, situated at some 625 metres, and found it clear of snow and covered in flowers nestling in the crevices among the shale. I noted the presence of *D. octopetala* and *S. acaulis*; the area abounded with *C. chariclea*, the males were rushing about just above the ground in search of the females and quite hard to catch; however, I managed to collect a fine series of fresh males and two newly-emerged females. After spending some time here I thought I detected the presence of a different species. It was a fritillary of about the same size as *C. chariclea* but it seemed to have a faster and more direct and purposeful flight. I pursued one with determination, trying not to be distracted by the *chariclea* males, towards which it often flew but veered off again quickly; finally I caught one; it was a male *C. polaris*, somewhat worn but worth keeping. I managed to catch another two males in rather better condition but saw no sign of any females. The only other species flying here was *E. pandrose*, represented by a few males and a single female. I returned to the van and we motored on during the early evening. *C. chariclea* and *E. pandrose* were both common flying across the road and over the tundra, and we stopped for just enough time to net a few more male and two more female *chariclea*. Eventually we descended through the birch zone, with branches brushing both sides of the van, and reached the main road by Suolovuobme Fjellstue. We agreed to turn north again towards Alta and for the third time we drove down off the plateau into the Alta river valley, crossed the Eibylva and drove up the Gagia road, parking at our, by now familiar, camping place on the Baeskades track. Under a cloudless sky we settled down for the night in bright daylight with the red ball-like sun dipping towards the hillside on the horizon at about 23.30 hours and prayed for continuing good weather.

Our prayers were duly answered, for the following morning we awoke to the sound of a cuckoo calling from a cloudless sky. By 08.30 I was on the hillside catching *C. hecla* males, which had not warmed up enough to outpace

me on the slopes but they were still very skittish and not easy to bag. Since our last visit, *Vacciniina optilete* (Cranberry blue) had emerged and they were abundant on the marsh below, flying with with recently hatched *Boloria aquilonaris* (Cranberry fritillary) and many *O. norna*. On the slopes *H. iduna* had become very numerous but mostly rather worn, many of the males having almost scaleless wings; *C. euphrosyne*, *E. disa* and *E. pandrose* were quite common but again rather worn except for a few which had obviously emerged the previous day.

Whilst on the hillside, I met Hans Henriksen and his wife from Denmark. We chatted briefly but we both wanted to make the most of the excellent weather and so parted, agreeing to meet for a drink in the evening. I climbed to the top of the hill to find the males of *O. bore* and *C. chariclea* very common with just a few females of both species below the summit, where I also took a fine female *C. polaris* – the only one of the trip. On the return journey down the hill I disturbed a Golden plover from its nest containing four pear-shaped eggs with their points meeting in the middle; she hurried off giving a marvellous “broken wing” display but as I did not follow her she gave up to perch on a rock nearby until I had reached a safe distance, when she quickly returned to her nest, settling down to brood once more.

As I made my way through the dwarf birches, where many Bluethroats were busy feeding their broods, I caught sight of a different fritillary cruising in and out of the shadows; this was my first specimen of *Clossiana thore borealis* (Thor's fritillary), of which I took four, all fresh males, during the day. I also bagged an aberrant female *O. norna*, which had four ocelli on each forewing of almost equal size and a fifth much smaller, this pattern being mirrored on the underside. By midday the temperature had risen to 27°C in the shade and it was very hot in the sun. As we ate our salad lunch we watched a herd of between one and two hundred reindeer come up the valley and settle down to cool off on the only remaining large snowfield about 200 metres away. They made a wonderful sight with the males' large antlers outlined against the snow. In the afternoon sunshine I wandered along the slopes watching the many butterflies that visited the clumps of *S. acaulis*, occasionally swinging the net to bag a fresher looking specimen of *C. freija*, *C. frigga*, *P. eunomia* or *H. iduna*; they were usually females as it is this sex that visits flowers more often. I spent some time sitting on a rock in the sunshine making quick dashes to net *O. norna* which still patrolled the area near the marshes, where *V. optilete* had now become very numerous and here I took the first f. *hela* of *C. selene* – a fresh male. During the evening Hans Henriksen came up to the van from the Fjellstue below where he was staying and we spent a very pleasant evening, chatting over a bottle of duty-free whisky. It had been six years since I had stayed with him at his house in Denmark and later met him on the island of Gotland, so we had much to talk about. I told him about the exceptional weather we had encountered on our journey north and he suggested that we had probably been the luckiest of all the British butterfly collectors who had come to the Arctic in recent years. He

said that he had seen more species of butterflies flying at this particular locality than he had seen on a single day during any of his many previous trips to the Arctic over the past thirty years.

The following morning was almost as bright as the previous day; there was just a thin veil of cloud in the early morning but this soon dispersed, giving us another hot sunny day. I again climbed to the top of the hill hoping to see some more *C. polaris*. This time I was unlucky, but it was good to see such large numbers of *C. chariclea* and *O. bore* which abounded on the summit and I took two more *E. disa* near a marsh on the far side of the hill. I had found this species to be rather scarce, usually appearing only in ones or twos, unlike its relative *E. embla*, flying in close proximity. In the afternoon I walked down from where we had parked the van, following the marshes beside the stream. At this slightly lower altitude I found the females of *B. aquilonaris*, *C. thore borealis* and the most exciting of all *C. hecla*. They were all very fresh and much easier to catch than their counterparts because of their habit of stopping to visit flowers more often. I also took *C. palaeno* at this level, quite an uncommon find this far north and probably due to the very warm weather further south. *E. pandrose*, which seemed to frequent all levels, was very common along with *C. freija* and the occasional *C. frigga*. I returned to the motorhome well pleased with the afternoon's bag and after dinner we celebrated an excellent two days, during which I had seen fifteen species in this locality; a truly memorable encounter with some of the most northerly butterflies in Europe, in some of the most magnificent weather imaginable in the Arctic. We agreed, however, that we should move on the following morning and make an early start south-westwards down the Arctic Highway from Alta.

In the morning the sun was still shining and I persuaded Mike that we should have another look at the meadows near the Alta river to see if the male *E. polaris* had been joined by any females or indeed another species. I was glad that he had agreed, for when we arrived I could see that not only were there females of *E. polaris*, but also some blues flying. In fact there were both sexes of *Lycaeides idas lapponicus* (Idas blue) and also *Polyommatus icarus* (Common blue), of a form with bright blue females. Also darting over the short grass was *Hesperia comma cataena* (Silver-spotted skipper) and I managed to net several males and one fresh female. On a patch of stinging nettle I found some larvae of *Aglaia urticae* (Small tortoiseshell). These may well have been of the form *polaris*, but I refrained from collecting any because of the risk of cooking them in the van, which got incredibly hot when we were forced to park in the sun. (A stupid mistake as it turned out!) The cloud began to build up as we set off from the Alta area, which receives some influence from the Gulf Stream even in these latitudes. With the generally early season we considered that the first week in July should be about right for the much higher altitude of Abisko. Just before we parked for the night the speedometer clocked up the 3000th mile from home and it started to rain.

In poor weather, we spent the next three days trying various detours off the main road; we drove up the Marselvdalen and the area around Rundhaug and Setermoen; the latter now being a military area was off limits. We also stopped at Tromsø, a pleasant town with a lot of tourist attractions. The modern Cathedral, built to represent an iceberg, and having the largest stained glass window in Europe, and the Arctic museum, were well worth a visit. On the last day of June we headed east out of Narvik on the recently constructed road towards Kiruna, up over the high pass near Bjorkiliden crossing back into Sweden and arriving at Abisko on the shore of Lake Tornatrask during the late afternoon. We parked for the night in the enormous tourist car park; by this time the sky had cleared somewhat and that evening we strolled down to the lake in hazy sunshine. On returning to the van, I made ready for my proposed trip up Mt. Njulla in the chairlift the following day, to try the area just outside the nature reserve for the remaining arctic butterflies I had not yet encountered. The morning of 1st July, however, broke grey and a heavy drizzle was sweeping across the car park, not at all what was required! We wandered around the tourist station, taking coffee in the café and looking round the small museum, to pass the time, peering out frequently to see if the weather was improving. It was not! In fact, if anything, it was getting worse, for the clouds were now well down the sides of the surrounding mountains. As we looked across the Tornatrask it was difficult to tell where the water finished and the cloud started. The temperature outside was only about 7°C all day. We checked the weather forecast at the tourist station but this did nothing to lift our spirits; more cloud with occasional light rain. The next morning found the situation unchanged and we decided enough was enough and headed back into Norway, turning south at Narvik and on down the Arctic Highway. The cloudy weather continued as we crossed the Arctic Circle on a high snow-covered plateau just north of Mo. It was a desolate place with no trees and so different from the northbound crossing in Finland just over three weeks before, with the temperature some 20°C higher!

In continuing bad weather without a butterfly in sight, we motored on south as far as the end of the Arctic Highway at Trondheim; a very attractive town with many of its old wooden buildings still standing. We had proposed to continue on south onto the Dovrefjell but the weather reports were still giving cloud and rain for this area. It appeared that the east side of Sweden was getting better weather with sunshine and much higher temperatures. We changed our plan and left Trondheim heading south-eastward back into Sweden. As we left the mountains behind, the cloud began to break up and as we reached Ann the sun was breaking through and the spirits lifting. We pulled off the road by a small area of marshy ground and I went off, net in hand, to catch the first butterfly for nearly a week. *V. optilete* and *B. aquilonaris* were flying here, the latter rather larger than those taken in Lapland and of the f. *alethea*. In order to investigate the last area of high ground we were likely to find on this trip we drove up the Ullandalen valley and parked for the night at the end of the road by the ski centre at about 750

metres, hoping to hike up to even higher ground the following day. For a change the morning of 7th July was clear and sunny and I set off across the marshy ground to climb the hill to the west of the valley. *Coenonympha tullia demophile* (Large heath) and *B. aquilonaris* were very common, with both sexes flying around the marshes with the ubiquitous *E. pandrose*. At about 825 metres, I found *L. idas*, *C. selene*, two fresh male *Boloria napaea* (Mountain fritillary) and a single *C. palaeno* female, rather worn but still busy laying on the *Vaccinium* sp, which abounded in this area. Lower down the valley *C. semiargus* and *A. artaxerxes* were flying with a single worn *Palaeochrysophanus hippothoe* (Purple-edged copper). On returning to the van, Mike told me that he had picked up (quite literally), a brown butterfly; this turned out, on inspection, to be another first sighting for this trip, *Erebia ligea dovrensis* (Arran brown) and during the early evening we managed to find four more specimens, all males and freshly emerged, resting on flowerheads.

The following day we drove back down the valley and turned south-east, heading for Sundsval. After a nightstop by the side of Lake Stodesjon, we continued on, trying to beat the advancing cloud cover, reaching the area near Sundsval where we had stopped on the outward journey by early afternoon. I searched the rough meadows in vain for *Aricia nicias* (Silvery argus), which is known to occur there, without success. In fleeting sunshine I found only the more common species, such as *E. ligea*, *Agrodiaetus amanda* (Amanda's blue), *Heodes virgaureae* (Scarce copper) and *Brenthis ino* (Lesser marbled fritillary), flying with *C. pamphilus* and *Aphantopus hyperantus* (Ringlet). The weather soon closed in again and we set off towards Gavle along the coast road, stopping for the night by the side of Lake Hedsjon in lightly wooded country where I added three further species to the list: *Carterocephalus palaemon* (Chequered skipper), *Lasiommata maera* (Large wall brown) both very worn and *Plebejus argus* (Silver-studded blue) quite fresh and flying in close proximity to *L. idas*. The following day was mainly cloudy but in one sunny spell we stopped in some mixed woodland near Storfjarden. *G. rhamni* was just emerging and flying with *Argynnis paphia* (Silver-washed fritillary) and *Fabriciana adippe* (High brown fritillary), both sexes being very fresh. I also found *H. virgaureae* males to be very common and a single female resting on a flowerhead with a male *A. amanda*.

We drove on, skirting Stockholm south-westwards through Norrköping and Linköping and then turned off the main road to Atvidaberg, where we took some very minor roads, arriving by the shore of Lake Loftern, where we parked for the night. During the last part of the journey we passed over some rocky terrain and we noticed that the plants and young trees seemed to be dying; further investigation showed that the ground was parched and we were told later that this whole area of south-west Sweden had had no rain since 17th May. One of the longest droughts known in Sweden had just ended with our arrival! The road around the edge of Loftern was covered in birch leaves and the whole area had the look of autumn about it. As I walked along the

path, I noticed that even the *Astragalus glycyphyllos* (Milk vetch) plants were brown and withered; the flowerheads had dropped off without producing seedpods. This plant is the sole pabulum of one of the rarest of Scandinavian butterflies, *Lycaeides argyrognomon* (Reverdin's blue). There were a few flying at this locality and later I found a few greener-looking plants beside the lake which a few butterflies had also found and I noticed a female ovipositing on the flowers. However, this species will have suffered very badly as a result of the drought and one can only but hope that it will have survived in this area so isolated from the centre of its population in Europe. We stayed at Lake Loftern for four nights; the days were spent walking through the woods making the most of the few brief sunny spells, as I knew this area to be quite productive from a previous visit in 1986. The more common species were *Mesoacidalia aglaja* (Dark green fritillary), *A. paphia* and *F. adippe*. I took the f. *cleodoxa* here on my previous visit but it did not seem to be present on this occasion. *B. ino* and second brood *L. sinapis* were fairly common together with *L. maera* and *Maniola jurtina* (Meadow brown). I added *Coenonympha arcania* (Pearly heath), *Hipparchia semele* (Grayling) and a single female *Issoria lathonia* (Queen of Spain fritillary) to my list of species for the trip. A little later I found *Thymelicus lineola* (Essex skipper), *Pieris brassicae* (Large white), *Lycaena phlaeas* (Small copper) and *Inachis io* (Peacock) to bring the total number of species seen on this locality to 29, a record for sightings at one locality for this trip.

With the weather still very unsettled and very little sunshine, we set off on the morning of 14th July, back towards Gothenberg arriving the next day, which turned out to be the nicest for the past two weeks. I spent the day admiring the fine display of roses in the municipal gardens, which had a fine palm house and, of all things, a tropical butterfly house! The following morning we boarded the 10 o'clock ferry to Harwich, arriving some 23 hours later. After a short stop in the Customs shed, we had a slow journey home with more traffic than we had seen during the past seven weeks. Despite the bad weather for the last three weeks, it had been an enjoyable and exciting trip, covering nearly five and a half thousand miles. I had seen 69 species of butterflies in total but the highlight of the trip was undoubtedly the area around Alta in Finmark, where during the two visits totalling eight days, I saw 19 Arctic species or subspecies in brilliant weather; a truly remarkable experience.

Finally I would like to thank Martin Gascoigne-Pees (7468) and Hans Henriksen for all the useful information they gave me on good butterfly localities in both Sweden and Norway. Also my thanks go to Mike for his excellent company, which made the hours – no, days – waiting for the weather to clear so much more enjoyable, and also for his fastidious work on the motorhome, prior to our departure, which allowed us such a trouble-free journey. The van had provided us with such a comfortable home with all mod-cons, the hot showers on returning from the many forays I made into

smelly bogs were not only a great comfort to me but absolutely essential for Mike because otherwise he would have had to put up with the smell! I can only but apologise to him as well, for persuading him to go into a countryside ridden with mosquitos and midges, which unfortunately affected him far worse than me. The only consolation I can offer, is to assure him that, because of the very early season in the Arctic, they were there in such small numbers that I could hardly believe our luck!

SECOND BROOD OF THE WHITE ADMIRAL (*LADOGA CAMILLA* L.)

by Peter Tebbutt (7941)

In *Bulletin* 43: 55 there appeared a short article on a second brood of the White admiral, and it was generally accepted that this was caused by the exceptionally hot summer of 1983, the normal diapause stimuli being overridden by the heat. I don't think the same reason can apply to my experience in the rather cool summer of 1993.

During a rather rare sunny spell on 7th August I spent about 30 minutes searching some honeysuckle and managed to find six White admiral larvae that were already in their second or third instars. Two weeks later, several had formed their hibernacula, but one was very large and was clearly going to feed up.

This larva was fully grown and went into fix on 2nd September and completed pupation three days later. A second larva by this time was 18mm long and this pupated during the afternoon of 13th September.

The first butterfly emerged on the 20th September, both were good sized females and were shown at the AES Exhibition. Although the larval duration was greatly reduced the pupal stage was extended. All White admirals that I have bred previously have spent ten to eleven days as pupae, males usually emerging after ten days while the larger number of females take eleven days, but both of these took fifteen days. This was probably caused by the lower average temperature that the pupae had to endure during their development in September.

This may also explain a curious story I heard several years ago from a collector who used to work Salcey Forest, Northants during the 1950s. He took a perfectly fresh White admiral in late September that was a fine black example of *ab. nigrina* Weymer, an aberration that we now know can be caused by cold shock to a freshly formed pupa. Unfortunately this specimen was lost when he was working on his collection. He was called away for a short while and on his return was dismayed to find that his family cat had decided that a drawer from a butterfly cabinet made an excellent substitute for a litter tray!

THERE'S A WORM CRAWLING OUT OF YOUR POCKET!

by Martin Leaver (5347)

Can anybody reassure me and dispel my worst fears by reporting a sighting of that once common friend of my childhood years, *Sphinx ligustri*, L. – they may of course have changed his name by now – the dear old Privet hawk?

In Bexley, Kent, where I lived as a child in the 1950s, I would often walk the suburban streets, scanning the pavement beneath the many thankfully unkempt privet hedges for the unmistakable evidence. I could take several prisoners within a few minutes, and transport them home in a box or a jar, or sometimes zipped safely inside the back pocket of my jeans, to liberate them onto the small lilac tree in my garden. (They didn't seem to mind the change of diet.)

It was this last form of transport which gave rise to the outburst which I use at the head of this missive, which was screeched at me by one or two ladies who were talking at their gates. It was terribly embarrassing for me, the poor larva was trapped halfway through the zip of the back pocket. There was nothing I could do without removing the garment, I had to rush home, straight into the bathroom, for there were people at home.

Now sadly, there are no untrimmed hedges. I still spend a lot of time cruising slowly around the back-roads of this and other areas (it's alright, I'm a driving instructor) and look in vain for the tell-tale deposits, but I haven't seen a single trace for absolutely decades.

I have a book; *Woolwich Surveys*, published in 1907 by the South Eastern Union of Scientific Societies. It catalogues the occurrence of almost every creature and plant around that time. Of *S. ligustri* it says; "Rather local – larvae frequent on privet, Lee, Lewisham, Greenwich etc, . . . Formerly common throughout district, now chiefly in extreme south and east of area." So was it on the decline even then?

I am firmly convinced that this species is now extinct within these shores, or certainly in the south-east, and has been wiped out by tidy gardening. But could there be a little haven somewhere, perhaps an isolated village in Kent where the rattle of Black and Decker has never been heard and the rampant upper stems of unchecked privet bend under the weight of huge beautiful *ligustri* larvae. If this is your village, drop me a line, I'll have my jeans on and be over like a shot!

WANTED...

An enthusiastic person to organise speakers and venue for the 1995 AGM and Members Day. Interested parties should contact the *Bulletin* Editor or any Council member.

HOW BIG IS THAT BUG? IDLE MEANDERINGS ON HOW WE MEASURE INSECTS

by Richard A. Jones (8355)

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When describing how big something is, the unit of measurement must take into account the absolute size of something. It is no use measuring car journeys in millimetres or a butterfly wingspan in fractions of a yard. How entomologists have measured insects depends on how big the insects are in the first place.

Various measures of length have developed for measuring different things, and as the study of entomology grew during the 19th century, the suitable measure of insect size underwent a subtle change; the millimetre arrived in Britain long before imperial oddities like the perch and the furlong gave way to metric rationalisation. What follows is an excursion through the ups and downs of size and how it is measured.

How big is big?

Human beings are of a certain size, not one size in particular, that would be biologically impossible, but of a certain order of magnitude. They generally start off about so big – imagine my hands gesturing, after the manner of a very unambitious angler, slightly more than double-page spread before you. They eventually reach up to this big – now imagine me holding up my hand in the air about six double-page spreads high.

It's all very well you having the *Bulletin* spread out in front of you, but wouldn't it be much easier if I used a recognised unit of measurement? Let's try again. What was that order of magnitude? From about one foot up to about six feet. Of course some babies start smaller and adults grow larger, but that apart, are we any closer to understanding size by using an anatomical feature, the foot, to measure things?

It should be no surprise that the foot, and its arm-span relative the yard, should have been the standard units of measurement for most things humans did, even before they were “fixed” on rulers and tape-measures. It was easy to imagine a fence four feet high, a person five and a half feet high and a tree fifty feet high. These were extremely practical measures for things of a certain magnitude.

Where they fell down, other measures were created. It would have been impossible to conceive exactly how far 242,700 feet might be, but to a Roman soldier it would have been a tiring 50-mile march; the mile (originally 1618 yards) was derived from 1000 paces. Other more specific measures came too: the acre (4840 square yards) was an area ploughable by a yoke of oxen in a day; the rod, perch or pole ($5\frac{1}{2}$ yards, $16\frac{1}{2}$ feet) was perhaps the optimum height of a string of hops; a chain (22 yards) was originally just that, a calibrated measuring chain, 22 yards being about as much ironmongery as it

was reasonable to expect the surveyor's assistant to cart about; a furlong at 220 yards was the length of the furrow in a "common" field, and so on.

At the maximum extreme, astronomers have long since given up on such earthly measures, producing the "astronomical unit", 93 million miles, the average distance from the Earth to the Sun. The light-year (5.878×10^{12} miles) is self-explanatory, but the parsec (3.26 light years) is defined as "a distance having heliocentric parallax of one second of arc"; you learn something every day! At the other extreme, particle physicists have used the ångström (10^{-10} metre), but as this is derived from the metric SI system, no more of this for now.

How big is little?

Smaller objects required smaller units, and the twelfth part of a foot, the inch, passed for the standard measure of moderately small things for many a long century. The origin of the word is buried deep in the Old English *ynce* derived from the Latin *uncia*, meaning one-twelfth. Incidentally, *uncia* also gave us the Middle English *unce*, hence the modern ounce, it being one twelfth of a pound. Hold on, is that right? Well it is in the Troy system of weights; a Troy ounce is equal to $1\frac{1}{3}$ of the more conventional ounces in the avoirdupois system where 16 make up one pound.

The inch was presumably used to describe the size of various small items, including insects, for several centuries and where more accurate diagnosis was required, the imaginative use of fractions sufficed. Having said this though, a quick perusal of many early entomological books shows a marked reluctance to mention insect size at all.

Moses Harris in his *Aurelian* (1766) appeared to take it for granted that his readers already knew the sizes of the creatures he describes. At least he illustrated them "from the natural subjects themselves", suggesting in rather obscure terms that the engravings were life size. The need for some estimate of size ranges apparently did not occur to him, and although he used inches to describe the depth to which a caterpillar may burrow to pupate, he took no pains to ascribe absolute size to his lepidopterous or other subjects.

Nevertheless the inch was the abundantly used unit of choice for most, and the straightforward application of simple fractions was clear and adequate for most insects. But as appreciation grew of the need for greater accuracy, the confusing nature of complex fractions meant that another, smaller unit was required.

Divide it by twelve

Having need of a smaller unit, what better than the "line"? Examination of almost any mid-19th century entomological book in English will show the widespread, if not universal, use of the line as a unit of length. The shorter (two-volume) *Oxford English Dictionary* (OED) has a full page of definitions and derivations for the word "line", but careful reading finally discloses an entry under substantive 2, meaning II, definition 9, where we find "the twelfth part of an inch, 1665".

On the whole it was accepted that the line was as well-known a measure as say, the inch or the foot, requiring no explanation; most books used it without comment. About the only time an explanation was offered was when abbreviations were used. This did not apply to the contractions more frequently used, shortening to lin. or to l., but to the use of symbols. Thus we find Stainton, in his *Manual of British Butterflies and Moths* (1857) offering us " for inch and ' for line, following with the statement "a line being the twelfth part of an inch".

The use of this smaller unit immediately made it easier to ascribe very accurate sizes to insects, and although most descriptions quoted a whole number of lines, fractions were commonplace. A minute beetle described as being $\frac{1}{3}$ of a line long was much easier to appreciate than trying to imagine $\frac{1}{36}$ of an inch.

Does the dozen need explanation?

The *OED* derivation of the name "line" from the French *ligne* is not terribly helpful, and it is likely that the twelfth-of-an-inch unit was in regular use long before it took its official title. An obsession with the duodecimal system of twelves, rather than the modern decimal system based on tens, is deep-rooted in our society and at first appears rather bizarre. The lessons taught from nursery school onwards, that modern numerical systems are based on ten because humans have ten fingers and ten toes, are thrown out of the window.

The dozen, from *douze* the French for twelve, is firmly ensconced in many systems of measurement. Apart from twelve lines in an inch and twelve inches in a foot, we have already seen twelve Troy ounces in a pound; there are twelve months in the year, twelve hours on the clock, twelve apostles, twelve days of Christmas and twelve bottles in a crate. This last probably gives the best clue as to why twelve-way measures are so prevalent: it is easy to construct a box to contain twelve, whether these be bottles or eggs, a box of ten just does not work. Likewise, an area can easily be divided into twelve, either three by four (a printed sheet so folded is the basis of a "duodecimo" book) or six by two (the usual arrangement of the twelve jurors making up a jury). Only bakers and printers, in fear of manufacturing wastage, used the "long dozen" – thirteen.

Wishing to make a point

It appears to be coincidental, but another special system of size measurement is based on twelve, and also on six. Movable metal type, used by printers, was measured in "points". Now fixed at 0.0138 of an American or British inch, the point started out as the seventy-second part of a French inch. Twelve points made one "pica". Modern computer-generated laser typesizes are still measured in points and picas, thus the *Bulletin* is typeset in 10-point type. To give it a more readable appearance, an extra point of spacing is allowed between the lines, so the 10-point type is laid on 11-point spacing, thus giving just over $6\frac{1}{2}$ lines per inch.

Historically, the sizes of metal type, although measured in points, were more usually referred to by specific names. These size names, not to be confused with the many names of particular typeface designs, ranged from various large "display" sizes for posters, through "pica" (12-point, as noted above) down to the minuscule "Brilliant" ($3\frac{1}{2}$ -point).

In the 18th and 19th centuries, one of the commonest typesizes used in the production of newspapers, bibles, hymnals and other books was "Nonpareil" (introduced 1647), a 6-point typesize, having 12 lines per inch. It is tempting to suggest a link between a line of this typesize with the "line" used as a measurement of insects.

Metrication moves in

The French, wishing to formalise a standard unit of length in 1797, settled on the metre. Although approximately the same as a yard (an arm's length), the cubit (another arm's length), half a fathom (ie half of two arms outstretched) and ell (a different arm's length), they elected to choose a more esoteric calculation. The metre was to be one ten-millionth of the distance from equator to pole, one forty-millionth the polar circumference of the Earth.

That may be all very well, but anyone could tell that this fraction of the Earth's decidedly non-spherical shape would vary depending on which quadrant was chosen, and how it was measured. So the length was "fixed" by the creation of a carefully manufactured bar of platinum/iridium alloy deposited in Paris and copies deposited throughout the world. The "legal" metre is 39.370113 inches, though a "redetermination" in 1927 found the value to be 39.370147 inches! To avoid the possible confusion in this technological world, The metre is now defined as 1,553,164.13 times the wavelength of the red cadmium line in air at 760mm of mercury pressure and 15°C!

Having previously suggested that it would be daft to describe a butterfly's wingspan as a fraction of a yard, the French proceeded to do almost exactly this. Several mid-19th century French books described quite small insects in terms of metres, giving, say, a tiny beetle's length as 0,0052 and its width as 0,002. The French and others continue to use a decimal comma where we use the decimal "point". Nevertheless, the term millimetre was coined (ten years after the metre, in 1807) and was fairly quickly integrated into continental entomology.

The invasion of the millimetre into entomological Britain occurred predominantly during the late 1870s and early 1880s. The vastness of the British Empire opened up a wealth of new regions to visit, and from them a wealth of new species to describe. A brief scan of species described new to science in the English entomological journals of the time shows a gradual acceptance of the new metric measure. With the widening horizons of the world came a widening of international entomological links, and the earliest mentions of the millimetre in British journals are invariably by continental authors during the 1860s.

A careful analysis of some particularly prodigious British authors of new species can even identify which year they transferred their loyalty from the line to the millimetre. Among the coleopterists, for example, D. Sharp adopted it quite early, about 1874, with T. Blackburn waiting until about 1877. Some authors went through a transition period, A. Matthews quoting minute measurements in both lines and millimetres around 1878 and 1879.

During the 1880s the use of the line declined, and by 1890 it had all but disappeared; however some of the older, and presumably more staid entomologists, dragged it on until about 1893.

What now?

The line is long gone, a quaint archaism offering a little confusion on first encounter, but easily understood and then ignored. The millimetre practically rules supreme, as befits its suitable size and international acceptance. I find it difficult to think of anything else when contemplating small insects.

The inch though continues to survive, and rightly so in my opinion. Despite being counter to any pretence of "Europeanism" or "modernism" which society might seek to impose on us, it remains a perfectly usable and adequate measure of things on a medium-to-small scale, and can be used to effect in descriptions where millimetres or even centimetres seem ugly and jarring.

After all, who would ever dream of calling a geometer caterpillar a "twenty-five millimetre worm", when "inch-worm" rolls so deliciously off the tongue?

UNUSUAL LARVAL FOODPLANTS

by Stuart Pittman (9135)

In July 1993 I discovered a Privet hawkmoth (*Sphinx ligustri*) caterpillar in the garden, a species uncommon in the southern half of the British Isles (Skinner 1984). I have been unable to identify the host plant which according to P.B.M. Allan and R.L.E. Ford would have been privet, lilac, ash or holly, all absent here. This individual did feed briefly in captivity on *Buddleia davidii* but when it was released onto the bush I lost sight of it.

The Vapourer moth (*Orýgia antiqua*) caterpillar was seen in June feeding on purple loosestrife (*Lythrum salicaria*) whereas it usually prefers shrubs and native deciduous trees.

Finally, a question which I can hope other *Bulletin* readers can help with concerns the Large white butterfly (*Pieris brassicae*). Four caterpillars are voraciously (as I write in June 1994) munching their way through my great mullein (*Verbascum thapsus*). Is this related to the family Cruciferae for I can find no information on this as a larval foodplant for the species?

NOTES FROM THE GLASGOW AREA

by Frank McCann (6291)

3 Langbar Path, Easterhouse, Glasgow G33 4HY.

Last Thursday evening (11th August 1994) I found a Grey dagger larva on a hawthorn hedge just east of Common Road, Glasgow. I have not found the species before at the hedgerow, and this was my first encounter with it this summer. Some hawthorn hedgerows have been destroyed in the area to make way for wider roads and houses.

On 13th August (Saturday) I went with my friend Margaret to the area just north of Bargeddie to look for Common blue butterflies which occur there. It was early when we left, around 8.30 am, and we found no blues, just some Meadow browns flying around. Just as we were leaving the area, a blue butterfly with much-faded wings was flying near a patch of vetch or trefoils. I put my small net over it, but somehow managed to lose it in the grass and vegetation.

We then left and walked along to Drumpellier Park, hoping to find some Acronictinae larvae, several species of which occur in an area next to a small marsh at a wood in the southern part of the park. We didn't find much to interest us, and we left for home along the Commonhead Road where we began searching the hawthorn hedgerows for larvae. At a part of the hedgerow facing south, trefoils were growing up in front of the hedgerow and their large seed-pods were showing. Just above the plant I could see the vertical shoots or twigs of the hawthorn and on one of these was a Coxcomb prominent larva. It was quite small, only in its second instar, I would guess. I noticed the bright greenish-yellow colour of the caterpillar and the large head which was hairy. I also observed the two small projections on the dorsal part of it near the anal segments. It is such a beautiful creature. I put it in a container with hawthorn leaves.

At home, I am feeding the Grey dagger larva hawthorn and lime, and the Coxcomb prominent is feeding on hawthorn and birch. I was a bit disappointed at losing the blue butterfly earlier in the day but finding the Coxcomb prominent has made up for it.

ENGLAND'S PROTECTED SITES DAMAGED

from habitat

According to a National Audit Office report a record number of England's Sites of Special Scientific Interest (SSSIs) have been damaged over the last year. During 1993 there were 40 sites in England that suffered damage that will take more than 15 years to repair, compared with 34 the previous year and around 20 a year during the 1980s. However, the situation may well be worse because only 33% of SSSIs are visited for assessment each year. After serious pollution and bad management by farmers, the second largest cause of damage was recreational activities.

PACK AND BIG GAME HUNTING BY WASPS

by Tony King (9094)

There have been several reports in recent *Bulletins* of wasps attacking dragonflies (Majerus 1993; Botterill 1993) and moths (Jones 1994). In each of the examples, the observations have been of single wasps and appear to have been one-off occurrences. I would like to add three more observations of wasp attacks on moths.

First, during the August bank-holiday of 1993, at least three common wasp workers (*Vespula vulgaris*) were seen to be hunting around my moth trap in the not-so-early morning, individually attacking any moths sheltering amongst the grass. Most of the moths were Lunar underwings (*Omphaloscelis lunosa*), a moth of similar size to those taken by Jones's (1994) wasp. A wasp would land on top of a moth, sting it, and often bite off the head and wings. The wasp appeared then to eat at least some of the body of the moth, but it was unclear whether it consumed the whole body or whether it removed it. Chinery (1986) states that while adults feed mainly on nectar and other sweet materials, the larvae are reared on insects collected by workers. Therefore it would seem unlikely that the moth bodies were used as an adult food source, but rather, having had appendages removed, they were taken back to the nest as larval food. Another, more convincing, possibility is that the bodies were not taken back whole, but were chewed and semi-ingested by the workers before being regurgitated back at the nest, to be given as larval food. This would account for the apparent lack of observations of wasps being seen to fly while carrying insect corpses. Botterill's (1993) account of a wasp eating the thorax of a dragonfly in France may possibly be accounted for by this theory; however, Majerus's (1993) account cannot be explained in this way as the wasp did not remove or consume the dragonfly.

The second observation concerns the size of wasp victims. Wasps are clearly vicious predators capable of taking large prey such as dragonflies, but Jones (1994) observed that in his moth trap it was mostly the smaller species of macrolepidoptera (eg. Pale mottled willow, Smoky wainscot and Marbled beauty) that were taken. However, in the early 1980s in a garden in Putney, an unidentified species of wasp was observed to tackle an adult Poplar hawkmoth (*Laothoe populi*), resulting in the death of the moth (D. O. King, pers. comm.). The motive for the attack was undetermined as the wasp was repelled in order to preserve the moth for future generations to admire.

All the reports so far are of wasps attacking prey individually. In contrast, the following observation is of several wasps succeeding in collectively tackling a large victim. Five unidentified wasp workers were seen attacking one full-grown caterpillar of the Eyed hawkmoth (*Smerinthus ocellata*) (P.J. and R.O. King, pers. comm.). The initial, very noisy attack occurred in an apple tree, with the caterpillar struggling intensely – mainly by thrashing around of the head. Half an hour later the drama was continuing, but now on

the grass beneath the tree. The wasps had already eaten some of the head of the caterpillar, and continued to feed while on the ground. Even at this stage the caterpillar was still alive, and the wasps were so aggressive as to ward off any close observation. Eventually the body disappeared altogether; however, whether the whole body was eaten or whether the remains were removed was not established.

If insects the size of dragonflies and hawkmoths can be tackled by single wasps, and even larger prey by groups, are there any insects that are safe? Surely the hard-bodied beetles are too much for them, but then that can only be expected as beetles are unarguably the ultimate insect group.

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BRIMSTONE MOTH IN PAISLEY

by John Hay (6878)

336 Glasgow Road, Ralston, Paisley, PA1 3BH, Scotland.

The Brimstone moth (*Opisthograptis luteolata*, Geometridae: Ennominae) is widely distributed throughout the British Isles and is a familiar, and well recognised, insect. Whilst living in the East Midlands, I have often observed these moths on the wing around street lamps and windows from about mid-June to the end of September. Indeed, I had a colony dwelling on a hawthorn bush in my garden in Leicestershire. Here, I noted the characteristic overlapping generations of the Brimstone, which can occur apparently from mid-April to October (Brooks, 1991). The latter does not occur in northern regions however, there being but one generation per annum, with the insects being in flight during June and July. Other sources claim that the moth is seen throughout Britain between August and October (Feltwell, 1984).

It came as some surprise therefore to observe a single adult male in flight at about 11.00 am on Saturday 23rd April 1994 outside my front gate in Paisley. The weather was overcast and humid. The moth alighted on a garden wall; it was in some distress and easy to capture with the aid of a small collection jar. Despite a fairly rigorous search of local hawthorn bushes as well as apple, plum and rowan trees, all with sparse foliage, for the presence of immature forms, none has yet been found. No other adults have been observed or captured to the middle of June.

REFERENCES

- Feltwell, J. (1984). *Field Guide to the Butterflies and Other Insects of Britain*. Reader's Digest Association Limited, London.
- Brooks, M. (1991). *A Complete Guide to British Moths*. Jonathan Cope, London.

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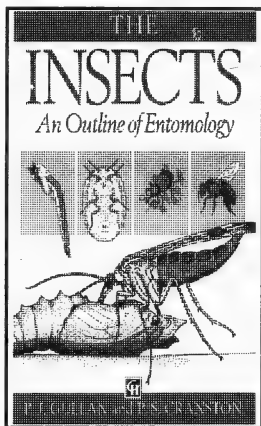
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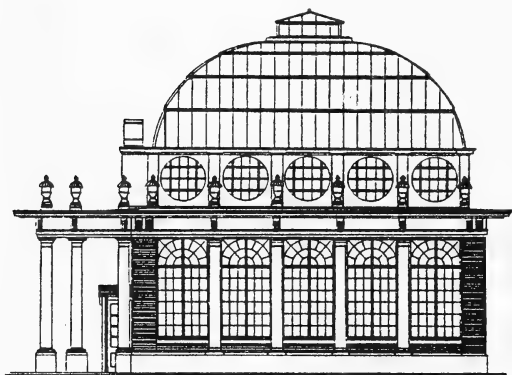
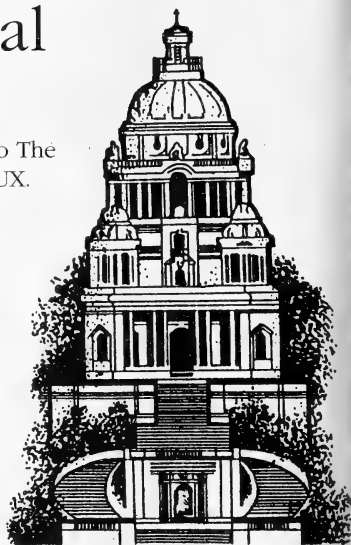
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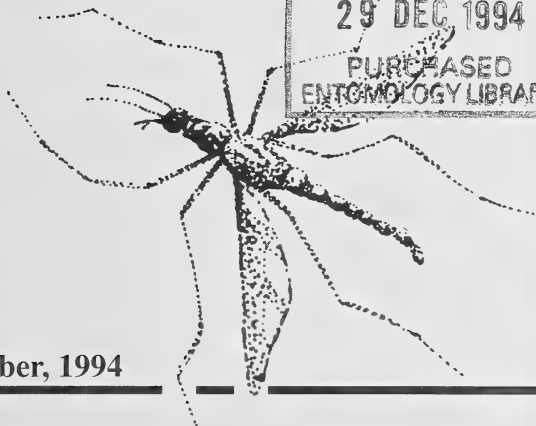
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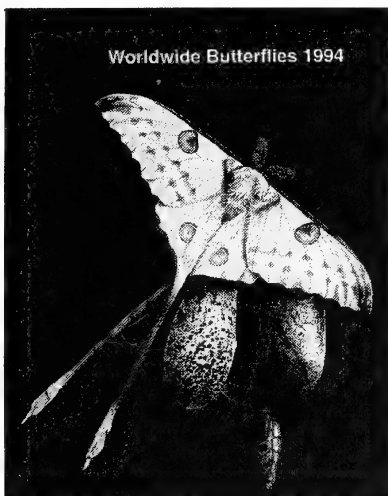
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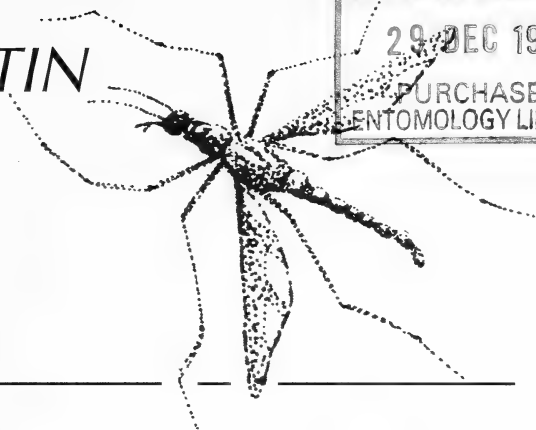
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During the summer of 1992, I was fortunate enough to be carrying out some survey work on the site for the Hampshire Wildlife Trust. Part of this work entailed recording the invertebrate species with particular reference to the Lepidoptera. On every night from 9th June to 21st July a Heath trap was run and the catch identified each morning. The trap was used in three locations within the reserve in order to sample each main habitat type. A Robinson mercury vapour trap and generator were loaned to me, from the Hampshire County Council Ranger Service, for use on five nights and I am particularly indebted to Dave Ball for arranging this. Butterfly species were recorded whilst carrying out other work throughout the reserve.

The following list details the species which were recorded over the period mentioned above. There is still a great deal of further work to be undertaken at the reserve in order to ascertain the site's full potential. Trapping throughout the year and also carrying out more intensive work on the "micros" would undoubtedly add to this total. As well as five nationally notable (Nb.) species there are also two noteworthy species for the county of Hampshire, these being 1885 *Abraxas sylvata* and 2029 *Euproctis chrysorrhoea*, the latter showing a distribution spread inland.

Further information on this reserve and other sites is available from Hampshire Wildlife Trust, 71 The Hundred, Romsey, Hampshire SO51 8BZ or by phoning (0794) 513786. Anyone wishing to carry out survey/monitoring work for the Trust on a voluntary basis should contact Mr David Sharrod, Reserves Manager, at the above address.

Species are listed in numerical order according to Bradley, J.D. & Fletcher, D.S. (1979), *A Recorder's Log Book or Label List of British Butterflies and Moths*, Curwen Books, with additions and corrections to nomenclature as published in the entomological press since that date. Nationally Notable species are indicated according to Ball, S. (ed.) (1986), *Invertebrate Site Register*, report no. 66, Nature Conservancy Council, where:-

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0014 <i>Hepialus humuli</i> Linn.	Ghost swift	1302 <i>Crambus</i> &S.	
0016 <i>Hepialus hecta</i> Linn.	Gold swift	1309 <i>Agriphila genecula</i> Haw.	
0017 <i>Hepialus lupulinus</i> Linn.	Common swift	1332 <i>Scoparia subfusca</i> Haw.	
0018 <i>Hepialus fusconebulosa</i> DeG.	Map-winged swift	1333 <i>Scoparia pyraella</i> D.&S.	
0148 <i>Nemophora degeerella</i> Linn.		1334 <i>Scoparia ambigua</i> Treits.	
0151 <i>Adela croesella</i> Scop.		1342 <i>Eudonia angustea</i> Curt.	
0161 <i>Zeuzera pyrina</i> Linn.	Leopard moth	1344 <i>Eudonia mercurella</i> Linn.	
0246 <i>Tinea semifulvella</i> Haw.		1356 <i>Evergestis forcifalis</i> Linn.	Garden pebble
0411 <i>Argyresthia goedartella</i> Linn.		1376 <i>Eurypara hortulata</i> Linn.	Small magpie
0461 <i>Ypsolopha ustella</i> Clerck		1377 <i>Perinephela lancealis</i> D.&S.	
0517 <i>Colephora frischella</i> Linn. Nb.	Small clover case-bearer	1378 <i>Phlyctaenia coronata</i> Hufn.	
		1392 <i>Udea olivalis</i> D.&S.	
0648 <i>Endrosis sarcitrella</i> Linn.	White shouldered house-moth	1405 <i>Pleuroptya ruralis</i> Scop.	Mother of pearl
		1413 <i>Hypsopygia costalis</i> Fabr.	Gold triangle
0658 <i>Carcina quercana</i> Fabr.		1415 <i>Orthopygia glaucinalis</i> Linn.	
0787 <i>Bryotropha terrella</i> D.&S.		1424 <i>Endotricha flammecalis</i> D.&S.	
0905 <i>Blastodacna hellerella</i> Dup.		1428 <i>Aphomia sociella</i> Linn.	Bee moth
0937 <i>Agapeta hamana</i> Linn.		1458 <i>Myelois cribrella</i> Fourc.	
0938 <i>Agapeta zoeana</i> Linn.		1494 <i>Capperia britanniodactyla</i> Greg.	
0970 <i>Pandemis cerasana</i> Hubn.	Barred fruit-tree tortrix	1498 <i>Amblyptilia punctidactyla</i> Haw.	
		1504 <i>Platytilia pallidactyla</i> Haw.	
0977 <i>Archips podana</i> Scop.	Large fruit-tree tortrix	1513 <i>Pterophorus pentadactyla</i> Linn.	White plume moth
		1526 <i>Thymelicus sylvestris</i> Poda.	Small skipper
1002 <i>Lozotaenia forsterana</i> Fabr.		1531 <i>Ochlodes venata</i> Br. & Grey	Large skipper
1011 <i>Pseudargyrotoza conwagana</i> Fabr.		1546 <i>Gonepteryx rhamni</i> Linn.	Brimstone
1013 <i>Olinda schmacherana</i> Fabr.		1549 <i>Pieris brassicae</i> Linn.	Large white
1020 <i>Cnephasia stephensiana</i> Doubl.	Grey tortrix	1550 <i>Pieris rapae</i> Linn.	Small white
1033 <i>Tortrix viridana</i> Linn.	Green oak tortrix	1551 <i>Pieris napi</i> Linn.	Green-veined white
1076 <i>Olethreutes lacunana</i> D.&S.		1561 <i>Lycena phlaeas</i> Linn.	Small copper
1082 <i>Hedya pruniana</i> Hubn.	Plum tortrix	1574 <i>Polymonatus icarus</i> Rott.	Common blue
1083 <i>Hedya dimidioalba</i> Retz.		1590 <i>Vanessa atalanta</i> Linn.	Red admiral
1175 <i>Epiblema uddmanniana</i> Linn.	Bramble shoot moth	1593 <i>Aglais urticae</i> Linn.	Small tortoiseshell
1260 <i>Cydia splendana</i> Hubn.		1598 <i>Polygonia c-album</i> Linn.	Comma
1293 <i>Chrysoteuchia culmella</i> Linn.		1614 <i>Pararge aegeria</i> Linn.	Speckled wood
1294 <i>Crambus pascuella</i> Linn.		1620 <i>Melanagria galathea</i> Linn.	Marbled white
1301 <i>Crambus lathoniellus</i> Zinck.		1625 <i>Pyronia tithonus</i> Linn.	Gatekeeper

- 1626 *Maniola jurtina* Linn.
 1629 *Aphantopus hyperantus*
 1640 *Euthrix potatoria* Linn.
 1652 *Thyatira batis* Linn.
 1653 *Habrosyne pyritoides* Hufn.
 1656 *Tethella fluctuosa* Hubn. Nb
 1669 *Hemitea aestivaria* Hubn.
 1673 *Hemistola chrysoprasaria* Esp.
 1674 *Jodis lactearia* Linn.
 1681 *Cyclophora linearia* Hubn.
 1702 *Idaea biselata* Hufn.
- 1708 *Idaea dimidiata* Hufn.
 1711 *Idaea triginata* Haw.
 1713 *Idaea versata* Linn.
 1727 *Xanthorhoe montanata* D.&S.
- 1728 *Xanthorhoe fluctuata* Linn.
 1738 *Epirrhoe alternata* Mull.
 1752 *Cosmorhoe ocellata* Linn.
 1754 *Eulithis prunata* Linn.
 1758 *Eulithis pyraliata* D.&S.
 1762 *Chloroclysta citrata* Linn.
- 1764 *Chloroclysta truncata* Hufn.
- 1765 *Cidaria fulvata* Forst.
 1776 *Colostygia pectinataria* Knoch
 1777 *Hydriomena furcata* Thunb.
 1781 *Horisma vitalbata* D.&S.
 1782 *Horisma tersata* D.&S.
 1784 *Melanthia procellata* D.&S.
 1803 *Perizoma alchemillata* Linn.
 1813 *Eupithecia haworthiata* Doubl.
 1830 *Eupithecia absinthiata* Clerck
 1834 *Eupithecia vulgata* Haw.
 1835 *Eupithecia tripunctaria* H.-S.
 1837 *Eupithecia subfuscata* Haw.
 1858 *Chloroclystis v-ata* Haw.
 1860 *Chloroclystis rectangularis* Linn.
 1876 *Hydrelia flammeolaria* Hufn.
 1883 *Acasis viretata* Hubn.
- 1885 *Abraxas sylvata* Scop.
 1887 *Lomaspilis marginata* Linn.
 1888 *Ligdia adustata* D.&S.
 1889 *Semiothisa notata* Linn.
 1893 *Semiothisa liturata* Clerck
 1901 *Cephis advenaria* Hubn. Nb
 1912 *Ennomos quercinaria* Hufn.
 1921 *Crocallis elinguaris* Linn.
 1922 *Ourapteryx sambucaria* Linn.
- 1931 *Biston betularia* Linn.
 1937 *Peribatodes rhomboidaria* D.&S.
 1941 *Alcis repandata* Linn.
 1947 *Ectropis bistortata* Goeze
 1955 *Cabera pusaria* Linn.
- 1956 *Cabera exanthemata* Scop.
 1957 *Logographa bimaculata* Fabr.
- 1958 *Logographa temerata* D.&S.
 1961 *Campaea margaritata* Linn.
 1976 *Sphinx ligustri* Linn.
 1981 *Laothea populi* Linn.
- Meadow brown
 Ringlet
 Drinker
 Peach blossom
 Buff arches
 Satin lutestring
 Common emerald
 Small emerald
 Little emerald
 Clay triple-lines
 Small fan-footed wave
 Single-dotted wave
 Treble brown spot
 Riband wave
 Silver-ground carpet
 Garden carpet
 Common carpet
 Purple bar
 Phoenix
 Barred swallow
 Dark marbled carpet
 Common marbled carpet
 Barred yellow
 Green carpet
 July highflyer
 Small waved umber
 Fern
 Pretty chalk carpet
 Small rivulet
 Haworth's pug
 Wormwood pug
 Common pug
 White-spotted pug
 Grey pug
 V-pug
 Green pug
 Small yellow wave
 Yellow-barred brindle
 Clouded magpie
 Clouded border
 Scorched carpet
 Peacock moth
 Tawny-barred angle
 Little thorn
 August thorn
 Scalloped oak
 Swallow-tailed moth
 Peppered moth
 Willow beauty
 Mottled beauty
 Engrailed
 Common white wave
 Common wave
 White-pinion spotted
 Clouded silver
 Light emerald
 Privet hawk-moth
 Poplar hawk-moth
- 1991 *Deilephila elpenor* Linn.
 1994 *Phalera bucephala* Linn.
 1999 *Stauropus fagi* Linn.
 2000 *Notodonta dromedarius* Linn.
 2006 *Pheosia gnoma* Fabr.
- 2008 *Ptilodon capucina* Linn.
- 2009 *Ptilodontella cucullina* D.&S. Nb
 2011 *Pterostoma palpina* Clerck
 2028 *Calliteara pudibunda* Linn.
 2029 *Euproctis chrysorrhoea* Linn.
 2030 *Euproctis similis* Fuessl.
 2044 *Eilema griseola* Hubn.
 2047 *Eilema complana* Linn.
 2050 *Eilema lurideola* Zinck.
 2057 *Arctia caja* Linn.
 2059 *Diacrisia sannio* Linn.
 2060 *Spilosoma lubricipeda* Linn.
 2061 *Spilosoma lutea* Hufn.
 2077 *Nola cucullatella* Linn.
 2089 *Agrotis exclamationis* Linn.
 2092 *Agrotis puta* Hubn.
 2098 *Axyia puris* Linn.
 2102 *Ochroleuca plecta* Linn.
 2107 *Noctua pronuba* Linn.
- 2118 *Lycophotia porphyrea* D.&S.
 2120 *Diarsia mendica* Fabr.
 2122 *Diarsia brunnea* D.&S.
 2123 *Diarsia rubi* View.
 2126 *Xestia c-nigrum* Linn.
- 2128 *Xestia triangulum* Hufn.
 2138 *Anaplectoides prasina* D.&S.
 2150 *Polia nebulosa* Hufn.
 2155 *Melanchna persicariae* Linn.
 2158 *Lacanobia thalassina* Hufn.
- 2164 *Hecatera bicolorata* Hufn.
 2193 *Mythimna ferrago* Fabr.
 2198 *Mythimna impura* Hubn.
 2199 *Mythimna pallens* Linn.
 2205 *Mythimna comma* Hubn.
- 2225 *Brachylomia viminalis* Fabr.
- 2279 *Acronicta aceris* Linn.
 2280 *Acronicta leporina* Linn.
 2284 *Acronicta psi* Linn.
 2291 *Craniophora ligustri* D.&S.
 2301 *Dypterygia scabriuscula* Linn.
 2302 *Rusina ferruginea* Esp.
 2305 *Euplexia lucipara* Linn.
 2306 *Phlogophora meticulosa* Linn.
 2318 *Cosmia trapezina* Linn.
 2321 *Apamea monoglypha* Hufn.
 2322 *Apamea lithoxyloa* D.&S.
 2326 *Apamea crenata* Hufn.
- 2330 *Apamea remissa* Hubn.
 2335 *Apamea scolopacina* Esp.
 2337 *Oligia strigilis* Linn.
 2338 *Oligia versicolor* Borkh.
 2339 *Oligia latruncula* D.&S.
- Elephant hawk-moth
 Buff-tip
 Lobster moth
 Iron prominent
 Lesser swallow prominent
 Coxcomb prominent
 Maple prominent
 Pale prominent
 Buff ermine
 Brown-tail
 Yellow-tail
 Dingy footman
 Scarce footman
 Common footman
 Garden tiger
 Clouded buff
 White ermine
 Buff ermine
 Short-cloaked moth
 Heart and dart
 Shuttle-shaped dart
 Flame
 Flame shoulder
 Large yellow underwing
 True lover's knot
 Ingrailed clay
 Purple clay
 Small square-spot
 Setaceous hebrew character
 Double square-spot
 Green arches
 Grey arches
 Dot moth
 Pale-shouldered brocade
 Broad-barred white
 Clay
 Smoky wainscot
 Common wainscot
 Shoulder-striped wainscot
 Minor shoulder-knot
 Sycamore
 Miller
 Grey dagger
 Coronet
 Bird's wing
 Brown rustic
 Small angle shades
 Angle shades
 Dun-bar
 Dark arches
 Light arches
 Clouded-bordered brindle
 Dusky brocade
 Slender brindle
 Marbled minor
 Rufous minor
 Tawny marbled minor

2380 <i>Charanyca trigrammica</i> Hufn.	Treble lines	2450 <i>Abrostola triplasia</i> Linn.	Spectacle
2381 <i>Hoplodrina alsines</i> D.&S.	Uncertain	2474 <i>Rivula sericealis</i> Scop.	Straw dot
2382 <i>Hoplodrina blanda</i> D.&S.	Rustic	2475 <i>Parascotia fuliginaria</i> Linn. Nb	Waved black
2422 <i>Pseudoips jagana</i> Fabr.	Green silver-lines	2477 <i>Hypena proboscidalis</i> Linn.	Snout
2434 <i>Diachrysis chrysitis</i> Linn.	Burnished brass	2489 <i>Herminia tarsipennalis</i> Treits.	Fan-foot
2443 <i>Autographa jota</i> Linn.	Plain golden Y	2492 <i>Herminia nemoralis</i> Fabr.	Small fan-foot

A THIRD OR FOURTH BROOD HOLLY BLUE (*CELASTRINA ARGIOLUS* L.)

by Peter Tebbutt (7941)

While checking some ivy near Woburn in October 1991 I found a fully-grown larva of the Holly blue. It hardly fed at all and went into fix for pupation only three days after I found it. Naturally I expected it to overwinter and emerge the following spring, so I was surprised to see the pupa colour up. A female emerged on 1st November 1991, and its markings were different to either of the usual broods. The black marking on the forewing was the same on the outer margin as found in the spring brood, while the costa was darkly scaled to just below the discal spot. The hindwing was virtually the same as the spring form except for a darkish band along the costa that extended from the base to the outer margin.

As I saw my first adult on the 12th April and continued to see adults in every month up to and including September, this particular butterfly is undoubtedly third generation and quite possibly an example of a fourth. In favourable conditions it only takes about one week for the larvae to hatch out, four weeks for them to feed up and pupate, and just over another two weeks before the butterflies emerge. This gives a seven to eight week cycle, so allowing plenty of time for a fourth generation to appear in exceptional years.

The whole country seemed to enjoy a population explosion of this delightful butterfly during 1991, the almost total lack of sightings by the end of 1992 was in stark contrast. Many people who collected larvae reported almost 100% loss to its species specific parasite, an ichneumon wasp, *Listrodomus nycthemerus*. This is almost certainly the cause for the rapid decline in the population, but the numbers can soon explode again given favourable weather conditions, as the wasp itself also suffers a drastic decline due to a severe lack of young larvae for it to infest. This boom and decline in populations seems to mirror those suffered by the hairstreaks, and while one may be flourishing another may be in steep decline. The situation being totally reversed within three to four years.

A PROVISIONAL LIST OF THE LONGHORNS (COL.: CERAMBYCIDAE) OF MONMOUTHSHIRE

by Dr R.R. Uthhoff-Kaufman (6291)

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Until recent years Monmouthshire appears to have occupied a somewhat anomalous geopolitical position; yet it has always indubitably formed part of the land mass of Wales: Offa, king of Mercia, patently recognised this when he built his Dyke, firmly separating the county – once part of the Great Lordship of Gwent – from the rest of his kingdom.

Most of the county place-names are Welsh, although since 1900 there are no longer any monoglot inhabitants. For centuries, Monmouthshire was regarded as a maritime county in the south-west of England; this may be inferred, too, from its Watsonian numeral 35, sandwiched between West Gloucestershire (34) and Herefordshire (36), whereas the remaining Welsh counties proper follow an unbroken sequence from 41 to 52; this is confirmed by Balfour-Browne, who placed Monmouthshire together with his English county lists.

However, when the political boundaries were revised in 1974, Monmouthshire was finally incorporated into Wales and at the same time re-named Gwent. Its present county borders correspond well with the Watsonian perimeters.

The eastern half of Gwent is hilly and still largely rural; its heavy industries were concentrated in the west. The Gwent Levels are a low-lying estuarine area, consisting of marshes and mud flats bordering the banks of the river Severn.

In so far as the Cerambycid beetles are concerned, the county records compare just as favourably with those of its well-worked neighbour, Glamorganshire. Parry seems to have been the first to publish a (data-less) list of these Coleoptera – over a dozen species – in one of those ephemeral hebdomadal entomological periodicals of the mid-Victorian era; thereafter, the literature is, to say the least, scanty, only a few notes and articles appearing during the 1940s, until Dr Horton again drew attention to the varied Longhorn fauna more than a decade ago. Despite topographical changes that have since occurred – the destruction of ancient deciduous woodlands and their replacement by more viable coniferous tracts – recent records suggest that Monmouthshire (Gwent) merits further investigation into the occurrence and distribution of its longicorn Coleoptera.

Nomenclature follows Kloet and Hincks, which, although flawed and out-of-date, is familiar to Coleopterists.

Sources are given in parenthesis and captor's names in square brackets. Annotations are added where appropriate.

Grateful thanks are extended to Drs G.A.N. Horton and P.F.G. Twinn for their current lists and to Mrs J.M. Ruffle, Librarian, Royal Entomological Society, for dispatching copies of materials relevant to the subject.

CERAMBYCIDAE

ASEMINAE

Arhopalus rusticus (L.)

Usk, vii.1979, 1 specimen caught in a m.v. light trap and another similarly, viii.1980 ([Horton]).

There is a single example, perhaps imported in pitprops, marked "Wales" in coll. Natural History Museum, London. There are no coal mines in the vicinity, but there is a sawmill, dealing only with local timber (Dr Horton, *in litt.*). Since the introduction of extensive conifer plantations in recent years, there is now a suggestion that *A. rusticus* has gained a foothold in the Principality.

LEPTURINAE

Rhagium bifasciatum F.

near Monmouth, 1863 (Parry).

Priory Grove Wood, *ante*-1946 (Kaufmann B).

Llandogo, v.1982, in flight round *Abies grandis*, the giant fir; Llanishen, v.1982, Pont y saison, v.1986, on fencing post; Llanllowell, vi.1991 [Horton]. Machen lead mines, vi.1971; Caed Llan, v.1982; Cwbach, v.1988; Coed Nant Seve, v.1988 (Twinn).

R. mordax (Deg.)

near Monmouth, 1863 (Parry).

Monmouth, 1939 [J.V. Blachford], *in coll.* Bristol Museum.

Monmouth, v.1945, 1 ex. [A.A. Allen] *in coll. mea*.

Pont y saison, vi.1986 and vi. 1987, on fencing posts ([Horton]).

Deri-fach, x.1987 (Twinn).

Stenocorus meridianus (L.)

near Monmouth, 1863 (Parry). Dixton Newton, *ante*-1947, *sine data* (Kaufmann D).

near Monmouth, vi-vii. 1978 and vi-vii. 1979 not uncommon in woodlands ([Horton]).

Trostrey, vii. 1982 (Twinn).

Grammoptera ruficornis (F.)

Skenfrith, v.1943 [1943] *in coll. mea*.

Monmouth, v.1945, a short series [A.A. Allen] *in coll. mea*.

Llangibi, v.1977; Usk, vi.1977; Magor, vi.1977, on umbels; Pont y saison, vi. 1977 and vii. 1979, near Monmouth, vi.1979, in woodlands; Cwm Coed y Cerrig, vi. 1988 [Horton].

G. variegata (Germ.)

Monmouthshire, *ante*-1947, a data-less record from a private collector's list, unfortunately destroyed (Kaufmann E); not on Dr Twinn's collated register.

Alosterna tabacicolor (Deg.)

near Monmouth, 1863 (Parry).

The latter cites this species under the name *Grammoptera laevis*, as it was then called in both Waterhouse's and Crotch's catalogues to which Parry may have had recourse.

Monmouth, v. 1945, a series [A.A. Allen] *in coll. mea*.

Leptura livida F.

Monmouthshire, marked as a new county record, *ante*-1947, but without further details (Kaufmann E). Unknown to Dr Twinn.

Judolia cerambyciformis (Schrank)

near Monmouth, 1863 (Parry).

Skenfrith, vi. 1940, quite common (Lloyd A).

Monmouth, v. 1945, a short series [A.A. Allen] *in coll. mea*.

St Pierre's Great Wood, vii.1978; near Monmouth, vi-vii. 1979, in the woodlands, one was observed pollinating *Orchis* flowers; Pont y saison, vii. 1979, not uncommon on wood spurge; Llantrisant, vi. 1989; Trellech, vi. 1989, very common ([Horton]).

Strangalia maculata (Poda)

near Monmouth, 1863 (Parry).

Skenfrith, vi. 1940, in flight (Lloyd A).

Dixton Newton, *ante*-1947, no other details (Kaufmann C).

near Pysgodlyn, v. 1971; Dingestow, vii.1982; Wyndcliffe, vi. 1989; Monnow, vi. 1989 (Twinn).

Monmouth, vii. 1976, fairly common and vii. 1978-79, abundant in woodlands; St Pierre's Great Wood, vii. 1978; Cwm Coed y Cerrig, vi. 1988; Llantrisant, vii. 1991; Llanllowell, vii. 1991 ([Horton]).

S. melanura (L.)

near Monmouth, 1863 (Parry).

Pont y saison, vi. 1978, not uncommon; near Monmouth, vi. 1978 and vi-vii. 1979, abundant on wood spurge, one was also pollinating *Orchis*; St Pierre's Great Wood, 1989, and vii. 1991; Trellech, vi. 1989 ([Horton]).

S. quadrifasciata (L.)

Draethen Forest, vii. 1977 (Twinn).

Magor Marsh, vii. 1978, on pollarded willow trunk; near Monmouth, vi. 1978, vi. 1979 and vii. 1986, singletons only in woodlands; St Pierre's Great Wood, viii. 1986, uncommon ([Horton]).

CERAMBYCINAE

Gracilia minuta (F.)

Gwent Levels, *post*-1969 [A.P. Fowles] (Drake).

See addenda in Hyman.

Molorchus umbellatarum Schreber

near Skenfrith, vi. 1940, 2 specimens on hawthorn; Llangua, vi. 1945, a sole example by sweeping (Lloyd A and C).

Aromia moschata (L.)

near Monmouth, 1863 (Parry).

Usk, vii. 1976, one found indoors; Llanllowell, vii. 1976, another on herbage [Horton].

Pyrrhidium sanguineum (L.)

near Monmouth, vi. 1979, a single specimen found on herbage in a woodland ride (Horton).

This was a particularly important capture in an ancient wood containing some very old oaks; it is possible, therefore, that it was not a fortuitous find but that somewhere nearby the beetle had been breeding: it will be recalled that *Pyrrhidium* has occurred in the adjoining Welsh counties of Glamorgan and Brecon, besides Radnor, and the Marches, Herefordshire and Shropshire. Most unfortunately, the wood in question has since been ruthlessly destroyed and replanted with conifers – so much for conservation of habitats!

Phymatodes alni (L.)

near Monmouth, 1863 (Parry).

Clytus arietis (L.)

near Monmouth, 1863 (Parry).

Skenfrith, vi. 1940, in flight (Lloyd).

Monmouth, v. 1945, a singleton [A.A. Allen] *in coll. mea*.

Magor Marsh, vi. 1975; Usk, v. 1977; near Monmouth, vi. 1979, in woods;

Pont y saison, vi. 1987 ([Horton]).

Magor Marsh, v. 1982 (Twinn).

Anaglyptus mysticus (L.)

near Monmouth, 1863 (Parry).

Skenfrith, vi. 1940, in flight (Lloyd).

Llangua, v. 1978 (Cooter).

Pencarreg, v. 1977, a couple of examples; Usk, vi. 1994, one found indoors [Horton].

LAMIINAE

Mesosa nebulosa (F.)

near Monmouth, 1863 (Parry).

Recorded also from neighbouring Gloucestershire and Herefordshire, and a little farther afield, the county of Worcester.

Pogonocherus hispidulus (Pill. & Mitt.)

Pont y saison, iv. 1977, on a fencing post [Horton].

P. hispidus (L.)

near Monmouth, 1863 (Parry).

Monmouth, v. 1945, 1 example [A.A. Allen] *in coll. mea*.

Usk, iv. 1979, one found indoors; Pont y saison, iv. 1991, on a wooden post [Horton].

Leiopus nebulosus (L.)

near Pysgodlyn, v. 1986 (Twinn).

Acanthocinus aedilis (L.)

Monmouthshire, ante-1947 (Kaufmann E).

Without doubt an importation in either foreign timber or the like from elsewhere in Great Britain.

Saperda populnea (L.)

near Monmouth, 1863 (Parry).

Stenostola dubia (Laich.)

St. Arvans, vi. 1986, a female in a m.v. light trap set up near a stand of *Tilia cordata*, the Small-leaved lime [Horton].

Phytoecia cylindrica (L.)

near Monmouth, 1863 (Parry).

The record in Hyman only states "South Wales".

Tetrops praeusta (L.)

near Pysgodlyn, v. 1986 (Twinn).

The above list of 28 species represents nearly half of the total Cerambycidae indigenous to the British Isles (60 species, excluding five, now regarded as extinct).

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SMALL BLUE BUTTERFLY IN STAFFORDSHIRE

by Jan Koryszko (6089)

I was most interested in Roy Frost's note Vol. **53**: 48 on the Small blue (*Cupido minimus*) butterfly relocated in Derbyshire. Not far away in Staffordshire it was recorded many years ago in Douedale, but is now considered extinct. The foodplant, kidney vetch, has almost been completely destroyed by rabbits.

During 1978 I remember Mr R.G. Warren saying it may well occur in the Manifold Valley in suitable sites. It was searched for with no luck, but on 13th July 1979, Mr M. Waterhouse visiting the Manifold Valley saw several Small blue on the wing and captured one for identification. No doubt the Small blue had been overlooked. This is understandable with large numbers of Northern brown argus (*Aricia artaxerxes salmaceis* Steph.) and the Chimney sweeper moth (*Odezia atrata* L.) on the wing at the same time.

On 21st June 1982 Mr R.N. Hill noted a colony of Small blue at Wyrley Common on an old colliery tip which had a prolific growth of kidney vetch (*Anthyllis vulneraria*). This tip is near Cannock, Staffordshire. It is remarkable that a colony should become established so far from the other known sites, the nearest being the Manifold Valley to the north and South Warwickshire to the south.

Kidney vetch can soon become established in newly-cleared areas and becomes abundant in a very short time, so it is well worth looking out for this butterfly. Some colonies can be very small and are often not seen for many years or overlooked. It shows however, that butterflies can travel long distances looking for new sites.

LOST ENGLAND OR PARADISE FOUND?

by Mike Jeffes (9621)

44 Windsor Road, Christchurch, Dorset BH23 2EE.

My family and I have just returned from our second visit to a most wonderful part of south-west France. We were staying in a cottage next to the converted barn of Brian and Stella Smith (9676R). The properties overlook the small valley of the river Argent Or with a fine view of the nearby limestone quarry. The whole area is very green mainly due to a preponderance of natural springs and a generally mild climate. The overall feeling is that of being in "a home from home" and this I think is one of the main reasons that Brian and Stella decided to move here as opposed to other picturesque localities.

When we first arrived last summer (1993) we were told that a previous visitor had wondered if this was what the English countryside had been like before the 20th Century. We were soon to find out what the person had meant! I had taken my Robinson trap hoping for some interesting hawkmoths but having two young sons meant that anything which moved was of potential interest. The variety of animal and plant life was astonishing and with so much to see nearby we only went on one "proper" trip, that being to the historic town of Cognac. It seemed to me that a person interested in any area of the natural sciences would have a field day here.

The great variety of plant species was obviously a key but amongst the rarer British species found here, some often commonly, were: butcher's broom, lizard orchid, snake's-head fritillary, cowslips and many other orchid species.

The woodland on the limestone hillside was mainly composed of oak and maple but in the wetter parts willow and poplar predominated. The only species largely noticeable by its absence was birch. One feature that always caused us to stand back and stare was the huge growths of mistletoe that seemed to be on most mature poplars.

The bird life was extremely varied but not really being an ornithologist I didn't have the knowledge or time to identify most of the smaller warbler-type species. Some highlights though included the buzzard family which circled the cottage every day, the green woodpeckers which called constantly from the woods and the lone honey buzzard we saw in a field.

Other vertebrate species that we saw were dormice, wall lizards, common lizards and fire salamanders. Also known to occur are green lizards, grass snakes, slow worms, several species of frog, foxes and badgers.

Last, but not least, on to the invertebrates. Amongst the wide variety seen were: glow worms, praying mantids, stick insects, huge longhorn beetles, the ant-lion (*Distoleon tetragrammicus*), black carpenter bees and a multitude of dragonfly and cricket species.

The list of butterflies is now approaching 70 with the vast majority of these being seen annually. Tom, our seven year old son, and I spent one tranquil July afternoon in the quarry watching a female *Papilio machaon* (Swallow-tail) attempting to find some wild carrot on which to oviposit. A great many British species were common here and during our summer trip a few "specials" included *Iphiclides podalirius* (Scarce swallowtail), *Nymphalis antiopa* (Camberwell beauty), *Pararge aegeria aegeria* (Speckled wood – orange spotted form), *Brintesia circe* (Great banded grayling) and *Maculinea arion* (Large blue).

The moths were extremely abundant, even by south of England standards. Most of the species were "British" so only a few presented real identification problems and I am indebted to Barry Goater for his help. In fact one moth, *Lymantria dispar* (Gypsy moth), was so common at times that a Robinson trap could not be run at all on good nights. Many other species have been noted by visitors, perhaps the most spectacular of which are *Saturnia pyri* (Giant peacock) and *Agrius convolvuli* (Convolvulus hawkmoth). The really exciting feature was being able to see species that you see once in a blue moon or not at all. I have include a species list for both trips.

In conclusion I actually think that, entomologically speaking, this is a paradise found and probably not what England used to be like even if most species can be found somewhere in Britain. I would imagine the number of sites in Britain that can boost this many local species is rather small! I hope that anyone thinking of venturing abroad in search of insects has as much fun as we did in the Charante region of France.

La Folatiere Nanteuil-en-Valle (25th – 31st July 1993)

Scientific name	English name	Foodplant
Family Cossidae:		
<i>Zeuzera pyrina</i>	Leopard moth	v.t.
<i>Cossus cossus</i>	Goat moth	v.t.
Family Zygaenidae:		
<i>Adscita globulariae</i>	Scarce forester	knapweeds
Family Limacodidae:		
<i>Apoda limacodes</i>	Festoon	oak, birch
Family Lasiocampidae:		
<i>Malacosoma neustria</i>	Lackey	v.t.
<i>Lasiocampa quercus</i>	Oak eggar	v.t.
<i>Odonestis pruni</i>	N/A	oak
<i>Gastropacha quercifolia</i>	Lappet	blackthorn, hawthorn

Family Drepanidae:

<i>Drepana curvatula</i>	Dusky hook-tip	alder, birch, oak
<i>D. harpagula</i>	Scarce hook-tip	small leaved lime
<i>Cilix glaucata</i>	Chinese character	hawthorn, buckthorn

Family Thyatiridae:

<i>Thyatira batis</i>	Peach blossom	bramble
<i>Habrosyne pyritoides</i>	Buff arches	bramble

Family Geometridae:

<i>Thalera fimbrialis</i>	Sussex emerald	v.h.
<i>Hemistola chrysoprasaria</i>	Small emerald	clematis
<i>Jodis lactearia</i>	Little emerald	v.t.
<i>Cyclophora annulata</i>	Mocha	maple
<i>C. albiocellaria</i>	N/A	maple
<i>C. ruficiliaria</i>	N/A	?
<i>C. punctaria</i>	Maiden's blush	oak
<i>Scopula ornata</i>	Lace border	marjoram, thyme
<i>Idaea vulpinaria</i>	Least carpet	v.h.
<i>I. biselata</i>	Sm. fan-footed wave	v.h.
<i>I. humiliata</i>	Isle of Wight wave	v.h.
<i>I. dimidiata</i>	Single dotted wave	v.h.
<i>I. aversata</i>	Riband wave	v.h.
<i>I. degeneraria</i>	Portland ribbon wave	v.h.
<i>Xanthorhoe fluctuata</i>	Garden carpet	crucifers
<i>Epirrhoe alternata</i>	Common carpet	bedstraws
<i>Hormis vitalbata</i>	Small waved umber	clematis
<i>H. tersata</i>	Fern	clematis
<i>Eupithecia centaureata</i>	Lime-speck pug	v.h.
<i>E. expallidata</i>	Bleached pug	golden rod
<i>Eupithecia</i> sp.	N/A	?
<i>Abraxas grossulariata</i>	Maggie	v.t.
<i>Lomaspilis marginata</i>	Clouded border	sallow, aspen
<i>Ligdia adustata</i>	Scorched carpet	spindle
<i>Semiothisa notata</i>	Peacock moth	birch
<i>S. clathrata</i>	Latticed heath	clovers, trefoils
<i>Plagodis pulveraria</i>	Barred umber	sallow, birch
<i>P. dolabraria</i>	Scorched wing	v.t.
<i>Opisthograptis luteolata</i>	Brimstone moth	v.t.
<i>Selenia lunularia</i>	Lunar thorn	v.t.
<i>Tephronia sepiaria</i>	N/A	?
<i>Crocallis elinguaris</i>	Scalloped oak	v.t.
<i>Angerona prunaria</i>	Orange moth	v.t.
<i>Biston betularia</i>	Peppered moth	v.t.
<i>Gnophus fuvrata</i>	N/A	?
<i>Ectropis crepuscularia</i>	Small engrailed	v.t.

Family Sphingidae:

<i>Sphinx ligustri</i>	Privet hawkmoth	privet, ash
<i>Hyloicus pinastri</i>	Pine hawkmoth	pine
<i>Mimas tiliae</i>	Lime hawkmoth	lime, elm
<i>Laothoe populi</i>	Poplar hawkmoth	poplar, willow
<i>Macroglossum stellatarum</i>	Hummingbird hawkmoth	bedstraws
<i>Deilephila elpenor</i>	Elephant hawkmoth	willowherb
<i>D. porcellus</i>	Small elephant hawkmoth	bedstraws

Family Notodontidae:

<i>Phalera bucephala</i>	Buff tip	v.t.
<i>Furcula furcula</i>	Sallow kitten	sallow, poplars
<i>Stauropus fagi</i>	Lobster moth	v.t.
<i>Notodonta dromedarius</i>	Iron prominent	sallow, poplars
<i>Tritophia tritophus</i>	Three-humped prom.	sallow, poplars
<i>Eligmodonta ziczac</i>	Pebble prominent	sallow, poplars
<i>Pheosia tremula</i>	Swallow prominent	sallow, poplars
<i>Ptilodon capucina</i>	Coxcomb prominent	v.t.
<i>Ptilodontella cucullina</i>	Maple prominent	maples
<i>Pterostoma palpina</i>	Pale prominent	poplars, sallow
<i>Drymonia querna</i>	N/A	oaks
<i>Gluphisia crenata</i>	Dusky marbled brown	poplars

Family Thaumetopoeidae:

<i>Thaumetopoea pityocampa</i>	Pine processionary	pine
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Family Lymantriidae:

<i>Euproctis chrysorrhoea</i>	Brown tail	v.t.
<i>E. similis</i>	Yellow tail	v.t.
<i>Lymantria monacha</i>	Black arches	oak
<i>L. dispar</i>	Gypsy moth	v.t.

Family Arctiidae:

<i>Mitochondria miniata</i>	Rosy footman	lichens
<i>Eilema sororcula</i>	Orange footman	
<i>E. griseola</i>	Dingy footman	lichens
<i>E. complana</i>	Scarce footman	lichens
<i>E. lurideola</i>	Common footman	lichens
<i>Arctia caja</i>	Garden tiger	v.h.
<i>Spilosoma lubricepe</i>	White ermine	v.h.
<i>S. luteum</i>	Buff ermine	v.h.
<i>Phragmatobia fuliginosa</i>	Ruby tiger	v.h.
<i>Euplagia quadripunctaria</i>	Jersey tiger	v.h.
<i>Tyria jacobaeae</i>	Cinnabar	<i>Senecio</i>

Family Nolidae:

<i>Meganola albula</i>	Kent black arches	dewberry
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Family Noctuidae:

<i>Agrotis exclamationis</i>	Heart and dart	v.h.
<i>A. puta</i>	Shuttle-shaped dart	v.h.
<i>Axylia putris</i>	Flame	v.h.
<i>Ochropleura plecta</i>	Flame shoulder	v.h.
<i>Noctua pronuba</i>	Large yellow underwing	v.h.
<i>N. comes</i>	Lesser yellow underwing	v.h.
<i>N. janthe</i>	Lesser broad bordered yellow underwing	v.h.
<i>Lycophotia porphyria</i>	True lover's knot	heather, Erica
<i>Diarsia rubi</i>	Small square spot	v.h.
<i>Xestia c-nigrum</i>	Setaceous hebrew character	v.h.
<i>Discestra trifolii</i>	Nutmeg	goosefoot
<i>Mamestra brassicae</i>	Cabbage moth	v.h.
<i>Lacanobia oleracea</i>	Bright-line brown-eye	v.h.
<i>Hecatera bicolorata</i>	Broad-barred white	hawkweeds

<i>Hadena rivularis</i>	Campion	<i>Silene, Lychnis</i>
<i>H. bicurvis</i>	Lychnis	<i>Silene, Lychnis</i>
<i>Mythimna ferrago</i>	Clay	grasses
<i>M. albipuncta</i>	White-point	grasses
<i>M. vitellina</i>	Delicate	grasses
<i>Lamprosticta culta</i>	N/A	?
<i>Acronicta aceris</i>	Sycamore	v.t.
<i>A. alni</i>	Alder moth	v.t.
<i>A. psi</i>	Grey dagger	v.t.
<i>A. auricoma</i>	Scarce dagger	v.t.
<i>A. rumicis</i>	Knot grass	v.h.
<i>Craniophora ligustri</i>	Coronet	ash, privet
<i>Amphipyra pyramidea</i>	Copper underwing	v.t.
<i>A. tragopoginis</i>	Mouse moth	v.h.
<i>Thalophila matura</i>	Straw underwing	grasses
<i>Polyphaenis sericata</i>	N/A	?
<i>Trachea atriplicis</i>	Orache moth	v.h.
<i>Cosmia diffinis</i>	White-spotted pinion	elms
<i>C. trapezina</i>	Dun-bar	v.t.
<i>Mesoligia furuncuta</i>	Cloaked minor	grasses
<i>Mesapamea</i> sp.	"Common" rustic	v.h.
<i>Hydraecia micacea</i>	Rosy rustic	v.h.
<i>Hoplodrina ambigua</i>	Vine's rustic	v.h.
<i>Heliothis virescens</i>	Marbled clover	v.h.
<i>Pseudopsis fagana</i>	Green silver-lines	v.t.
<i>Colocasia coryli</i>	Nut-tree tussock	v.t.
<i>Macdunnoughia confusa</i>	Dewick's plusia	v.h.
<i>Autographa gamma</i>	Silver Y	v.h.
<i>Abrostola trigemina</i>	Dark spectacle	nettle, hop
<i>Dysgonia algira</i>	Passenger	v.h.
<i>Euclidia glyphica</i>	Burnet companion	clovers
<i>Tyta luctuosa</i>	Four-spotted	bindweeds
<i>Lygephila cracca</i>	Scarce blackneck	wood vetch
<i>Rivula sericealis</i>	Straw dot	grasses
<i>Ephesia fulminia</i>	N/A	?
<i>Hypena proboscidalis</i>	Snout	nettle
<i>H. lunalis</i>	Jubilee fan-foot	v.h.
<i>Herminia nemoralis</i>	Small fan-foot	ivy
Family Pyralidae:		
<i>Ancylolomia tentaculella</i>	N/A	large grasses
<i>Pyrausta purpuralis</i>	N/A	mint, thyme
<i>Sitochroa palealis</i>	N/A	wild carrot
<i>S. verticalis</i>	N.A.	v.h.
<i>Ostrinia nubilalis</i>	European corn borer	maize, mugwort, hop
<i>Eurrhpara hortulata</i>	Small magpie	nettle, Labiatae
<i>Udea ferruginalis</i>	N/A	v.h.
<i>Nomophila noctuella</i>	Rush veneer	clovers, grasses
<i>Dolicharthria punctalis</i>	N/A	v.h.
<i>Pleuroptya ruralis</i>	Mother of pearl	nettle
<i>Synaphe punctalis</i>	N/A	mosses
<i>Endotricha flammealis</i>	N/A	v.h.; v.t.
<i>Pampelia obductella</i>	N/A	marjoram
<i>Numonia glauccella</i>	N/A	blackthorn, hawthorn
<i>Myelois cribrella</i>	Thistle ermine	thistles

La Folatiere.
Nanteuil-en-Valle (30th March – 7th April 1994)

Scientific name	English name	Foodplant
Family Hepialidae:		
<i>Hepialus lupulinus</i>	Common swift	roots of plants
Family Pyralidae:		
<i>Udea ferrugalis</i>	N/A	v.h.
Family Thyatiridae:		
<i>Polyplocia ridens</i>	Frosted green	oak
Family Geometridae:		
<i>Alsophila aescularia</i>	March moth	v.t.
<i>Horisme vitalbata</i>	Small waved umber	clematis
<i>Gymnoscelis rufifasciata</i>	Double-striped pug	v.h. v.t.
<i>Trichopteryx carpinata</i>	Early tooth-striped	honeysuckle, saw, birch
<i>Ligdia adustata</i>	Scorched carpet	<i>Euonymus</i> (spindle)
<i>Semiothisa clathrata</i>	Latticed heath	various clovers, trefoils
<i>Selenia dentaria</i>	Early thorn	v.t.
<i>Lycia hirtaria</i>	Brindled beauty	v.t.
<i>Biston strataria</i>	Oak beauty	v.t.
<i>Ematurga atomaria</i>	Common heath	heathers, clovers
<i>Aleucis distinctata</i>	Sloe carpet	blackthorn
Family Notodontidae:		
<i>Stauropus fagi</i>	Lobster moth	v.t.
<i>Peridea anceps</i>	Great prominent	oak
<i>Pheosia tremula</i>	Swallow prominent	poplars and willows
<i>Pterostoma palpina</i>	Pale prominent	poplars and willows
<i>Drymonia ruficornis</i>	Lunar marbled brown	oak
Family Arctiidae:		
<i>Diaphora mendica</i>	Muslin moth	v.h.
Family Nolidae:		
<i>Nola confusalis</i>	Least black arches	lichens on trees
Family Noctuidae:		
<i>Ochropleura plecta</i>	Flame shoulder	v.h.
<i>Cerastis rubricosa</i>	Red chestnut	v.h.
<i>C. leucographa</i>	White-marked	v.h.
<i>Egira conspiciaris</i>	Silver cloud	v.h.
<i>Orthosia cruda</i>	Small quaker	v.t.
<i>O. miniosa</i>	Blossom underwing	oak
<i>O. stabilis</i>	Common quaker	v.t.
<i>O. incerta</i>	Clouded drab	v.t.
<i>O. munda</i>	Twin-spotted quaker	v.t.
<i>O. gothica</i>	Hebrew character	v.t.
<i>Xylocampa areola</i>	Early grey	honeysuckle
<i>Conistra vaccinii</i>	Chestnut	v.t.
<i>Colocasia coryli</i>	Nut-tree tussock	v.t.

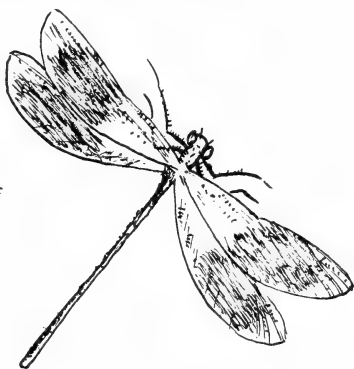
Key to foodplants:

v.h. = various herbaceous plants

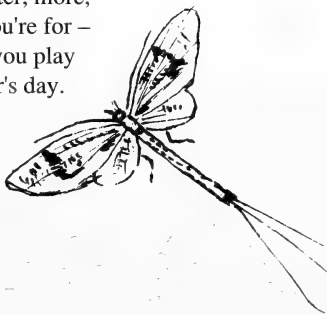
v.t. = various trees

A SUMMER'S DAY – HERE BE DRAGONS

I saw this damselfly in distress
 Floating,
 Ophelia-like downstream,
 a feature
 Of her passivity –
 The waiting for a mate to drag her by the scruff
 To safety
 Perhaps to tell her (like Ophelia)
 Not to be such a stupid creature.



- (i) Hover, “squito” mayfly, gnat –
 How I wonder what you're at,
 As above the streams you play
 Lightly on this summer's day
- (ii) Little knowing what's to come
 As you tumble in the sun
 Mesmerised each by your lover –
 “Squito”, mayfly, gnat and hover.
- (iii) Moving grace of tinkling streams
 Twinkling pools – the stuff of dreams,
 But here be dragons to and fro –
 Hover, mayfly, mosquito.
- (iv) Darters, hawkers join the fun,
 Bejewelled in the summer sun.
 With staring eyes they trawl the sky
 “Squito”, gnat and hoverfly.
- (v) Not with fire and smoke the kill,
 But sudden aerobatic skill
 With beauty, cunning, nimble, sly,
 Hover, “squito”, gnat, mayfly.
- (vi) Now no matter, child, the name
 Or purpose of this passing game
 See the drama come and go
 Of gnat and mayfly, mosquito.
- (vii) Hawker, damselfly, darter, more,
 How I wonder what you're for –
 As above the streams you play
 Deadly on this summer's day.



A cloud weaves itself
 Into a dragon
 – Unravels to a fly.

SOME OBSERVATIONS WHILE BREEDING THE GREEN HAIRSTREAK (*CALLOPHRYS RUBI* L.)

by Peter Tebbutt (7941)

Most books refer to the cannibalistic tendency of the larvae of the Green hairstreak, and several mention the fact that the pupa is the only British species that makes a noise.

Although I don't mass rear, I have rarely had any problem with the larvae. I use the round clear plastic boxes, either two inches or two and a half inches in diameter, and place two or three similar sized larvae in each box with a piece of bird's-foot trefoil (*Lotus corniculatus*) which is changed daily. Of the fifty or so larvae that I usually restrict myself to, it is unusual to lose more than three or four, those in fix being at greatest risk. I have had similar losses with the White-letter hairstreak, and this is stated not to be cannibalistic!

The noise of the pupa has been described variously as a squeak, creak or a low-pitched rasp, and was first noted in 1774. It is believed to be used to attract ants, and it is now known that most lycaenid pupae produce a sound and seem to be attractive to various ant species. The Green hairstreak is different because the noise is clearly audible to the human ear. To me it sounds almost as if the butterfly has already developed and is rapidly vibrating its abdomen against the pupal case. In reality it is created by two abdominal segments rubbing against each other, but this movement is not visible to the naked eye. I have only heard this sound during the first five or six weeks of the pupal life, and have had no success in trying to get any noise from a hibernating or post-hibernation pupa. Perhaps it is now not desirable for the pupa to attract ants, particularly just before the adult emerges. Has any reader studied this phenomenon? If so I'm sure that many members would be interested in an article on the subject.

It is very hard to give a life-span to the adult stage, but most books quote up to six weeks in captivity as the longest that can be expected. I'm sure that many are copying what Frohawk originally stated in 1924. My own "record" is slightly different from this. On 19th April 1984 I had a male emerge. It was easily separated from the other adults as it had just a single small spot on each hindwing, and the right rear wing was trapped in the pupal case, causing a slight deformity. This certainly didn't stop it flying or courting, and it paired with at least one female. It out-lived every other adult and finally died on 23rd June, having spent an incredible 64 days in various breeding and flight cages. Although the cages were protected from the worst of the weather there was no attempt to keep it in a cool place to extend its lifespan artificially. Most of the others lived on average 20 days, and very few survived past 30 days.

ENTOMOLOGICAL MEMORABILIA FROM VIENNA, AUSTRIA

by John Hay (6878)

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Vienna is perhaps most famous for the architectural splendour of the Hapsburgs and the nobility of the baroque period, its musical tradition and of course the white Lipizzaners that perform in the Spanish Riding School. Also of note is the Reisenrad (Big Wheel), 67 metres high, located in the Prater, which was featured in the film *The Third Man*. For the discerning visitor there is also considerable entomological interest.

Whilst visiting the city from 5th–9th May 1994, in order to attend a scientific meeting held in the resplendent Hotel Sacher, sited near to the State Opera House, I was able to discover many items of interest to the entomologist.

The Vienna Natural History Museum was the first stop. In Hall 24 on the first floor of this magnificent building is the insect collection. Herein is a systematically ordered collection of more than 50,000 specimens comprising around 10,000 species, contained in about 224 show cases. Although all insects on display are of interest, this visitor was particularly intrigued by the complete series of Silphidae of the genus *Necrophorus*, some species of which he had not observed previously. The specimens of medical and veterinary significance were of the highest quality. Exhibits of social insects and their nests were a prominent feature of the display.

A visit to the Schmetterlingshaus (Butterfly House) located in the grounds of Schlosspark Schonbrunn, which also houses the magnificent palace of that name, a monument to the Hapsburg dynasty, was next on the itinerary. I have seen better stocked butterfly houses in the UK, but I was very taken by the quality of the various species of *Papilio* and also *Euploea mulciber* and *Lamproptera meges* which were in outstanding condition. Also present was the majestic “Fledermausflügel” (*Atrophaneura polyeuctes*) which would certainly have appealed to the exotic tastes of the Hapsburgs.

In the Schlosspark, on a hill behind the palace, is a triple-arched triumphal gate with sweeping staircases; this martial monument is the Gloriette, built in Classical style in 1775 by von Hohenberg. Heading from here towards the obelisk, on the left hand side of the fairly narrow avenue lined with lime trees, I was confronted with a plethora of firebugs (*Pyrrhocoris apterus*). I have previously recorded some observations concerning these insects from Berlin (Hay, 1994), but never before have I seen them in such profusion. Many were mating; others were devouring aphids (*Eucallipterus tiliae*); yet others were scrambling around on the gravel and amongst the surrounding foliage. This colony of firebugs could present a considerable opportunity for further study of these very interesting insects.

Amongst other notable entomological encounters was an observation of the capsid bug *Deraeocoris olivaceus* partaking of an aphid in the proximity of the Johann Strauss Monument, possibly the most famous landmark in Vienna, located in the Stadtpark, and perhaps most curious of all, a sighting of the fairly uncommon but exquisitely attractive and distinctive syrphid *Xylotomima lenta*, hovering around the entrance of what was once the consulting room of the psychiatrist Sigmund Freud at Berggasse 19. Was it searching for some rotten wood in order to breed or was it in need of some insect psychoanalysis?

REFERENCE

Hay, J. (1994). The firebug (*Pyrrhocoris apterus*: Hemiptera-Heteroptera) in Berlin, Germany. *Bulletin of the Amateur Entomologists' Society* **53**: 37-38.

BOOK REVIEW

Caves and Cave Life by Philip Chapman. Hdbk 8vo, 219+(5)pp. Illustrated in black and white. New Naturalist No. 79. ISBN 0 00 219907 6. Harper Collins 1993. Price £27.50.

Since caves are generally thought of as habitats for bats and potholers, members might wonder why this book is reviewed here. The answer of course is that caves are also the habitat of a diverse assortment of mainly highly specialised insects and other invertebrates which are deserving of far more intensive study than they have received in the past. Entomologists as well as speleologists should also be entering caves and this book is a splendid introduction to the subject.

The book opens with a chapter on the early history of cave exploration and includes a full-page reproduction of the earliest illustration (1854) of cave invertebrates. This is followed by a chapter detailing the habitat of caves and includes a list of the Phyla to be found therein. There follows a description of the various limestone caves of Britain and Ireland and then, the longest chapter, cave flora and fauna followed by an account of how they interact and which part of the cave various species prefer. Then follow the future of caves, their conservation and the dangers that threaten them. Finally there is a well laid out bibliography, but the index is not only in a minute typeface, but the printer has forgotten to foliate these pages.

The illustrations consist of excellent photographs and reproductions of old engravings showing caves and cavers, but the majority of the line illustrations (by Brin Edwards) are of insects and other invertebrates. Most of these are really rather endearing and I particularly liked the one of a snail (who knew that cave snails excrete a chitin-dissolving fluid?) attempting to eat a hibernating Herald moth.

Brian Gardiner

THE MOTHS OF MEPAL – ADDITIONS FOR 1993

by Rob Partridge (8956)

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This is the third article about the moths recorded in and around my home village of Mepal in Cambridgeshire. The earlier articles appeared in *Bulletins* **51**: 293-297, and **52**: 267-272.

A further 32 species were recorded in 1993, making a total of 234 since recording began in 1991. Robinson and Heath traps were run regularly in the garden, and the Heath trap was used in the countryside around the village. The most significant recording period was in July when, thanks to the loan of a further Robinson trap by Paul Waring, I was able to record intensively at a site within the boundaries of the Ouse Washes nature reserve. The primary aim here was to test the attractiveness of m.v. light to the Goat moth (*Cossus cossus*) which is known to be present, but a good number of new macro species were noted too. The results of the Goat moth survey have been published in the *Entomologist's Record*.

As with previous lists, the order is that used by Skinner (1984). All records in the list below refer to 1993 unless otherwise stated.

HEPIALIDAE

Ghost moth (*Hepialus humuli humuli*). First noted on 27th June when a single male was netted in the garden. Several came to light in July. It seems unlikely that such a noticeable moth has been overlooked in the previous two seasons – perhaps it was more abundant in 1993.

COSSIDAE

Leopard moth (*Zeuzera pyrina*). Only two specimens, both on 16th July but in separate Robinson traps. A number of mature poplar trees were felled in the city of Ely in 1993, reputedly because they had been badly damaged by this species.

SESIIDAE

Red-tipped clearwing (*Synanthedon formicaeformis*). One was taken while feeding at the blossom of apple-scented mint (*Mentha rotundifolia*) in the garden on 14th August.

THYATIRIDAE

Buff arches (*Habrosyne pyritoides*). First noted on 2nd July, several more came to m.v. light. This may be one of a number of species listed here that come to actinic light infrequently if at all.

GEOMETRIDAE

Common emerald (*Hemithea aestivaria*). First netted at dusk on 2nd July, this species then appeared at light on several occasions.

Grey pine carpet (*Thera obeliscata*). One came to m.v. on 19th September, another on 5th October.

July highflyer (*Hydriomena furcata*). A few were noted at m.v. from 16th July. Not as common as it is in some areas, it seems.

May highflyer (*Hydriomena impluviata*). One only in 1993, on 10th May at actinic. Alder (*Alnus glutinosa*), the foodplant, does not occur naturally here but was planted along the bypass some years ago. (Two further specimens have been taken in 1994.)

Small yellow wave (*Hydrelia flammeolaria*). One came to m.v. on 2nd July; another to actinic later in the month.

Latticed heath (*Semiothisa clathrata clathrata*). One worn specimen was captured by hand in the garden on 6th August, reminding me that I should be spending more time searching for diurnal species.

V-moth (*Semiothisa wauaria*). A single came to m.v. on 16th July. Possibly one of the more local species taken this season. (Two more have been taken in 1994, found flying at dusk around a solitary, old-established blackcurrant bush.)

Bordered beauty (*Epione repandaria*). Sallows (*Salix caprea* agg.) are common here and this is a species that might have been expected in the damp riverside situation on the Ouse washes. Several came to m.v. from 14th July.

Swallow-tailed moth (*Ourapteryx sambucaria*). This large and noticeable species appeared at m.v. from 16th July and was common thereafter. Why it had not been recorded in the earlier seasons is something of a mystery.

SPHINGIDAE

Pine hawkmoth (*Hyloicus pinastri*). One specimen in good condition was found in the m.v. trap on 18th July, an apparently late date. The moth breeds in Norfolk and Suffolk but I am not aware of resident populations in Cambridgeshire.

NOTODONTIDAE

Sallow kitten (*Furcula furcula*). Noted at m.v. on 26th July, presumably an early member of the second brood. Found in small numbers subsequently.

LYMANTRIIDAE

White satin moth (*Leucoma salicis*). 16th July was the first date, at m.v. After this, the species arrived in some numbers in both m.v. traps. Another species that could not have been overlooked in earlier years.

ARCTIIDAE

Dingy footman (*Eilema griseola*). A singleton came to m.v. on 26th July.

NOCTUIDAE

Gothic (*Naenia typica*). Another single specimen, coming to m.v. on 11th July. There seems to be a scarcity of records in the county but it is apparently regular in Huntingdonshire, VC31 (B. Dickerson, pers. comm.).

Striped wainscot (*Mythimna pudorina*). One came to m.v. on the Ouse washes on 21st July.

Southern wainscot (*Mythimna straminea*). Several came to m.v. from 16th July. The fresher specimens were quite easy to recognise, the straight termen giving the forewing an almost square-ended appearance.

Shoulder-striped wainscot (*Mythimna comma*). Two were taken at m.v. light on 15th July.

Chamomile shark (*Cucullia chamomillae*). One came to actinic light on 24th April and was found at rest on a nearby wall.

Mullein (*Cucullia verbasci*). Two specimens came to the actinic light on the same date as the species above – an odd coincidence as they are closely related.

Knot grass (*Acronicta rumicis*). A common species according to the literature but only one was recorded, at m.v. on 15th August in good condition; it was probably of the second brood. On a more general point, it is well-known that many species of moth single brooded in the north are double brooded in “southern” England. I suppose that the species concerned draw the line between these notional areas differently but for the record it seems that all the species I have encountered so far seem to regard east Cambridgeshire as very definitely “southern”.

Dingy shears (*Enargia ypsilon*). This species came to m.v. in small numbers from 26th July. Willow (*Salix fragilis*) is the commonest tree here but a search under loose bark in the spring produced no larvae.

Dun-bar (*Cosmia trapezina*). 24th July saw the first at m.v.; others appeared up to 19th August.

Dusky brocade (*Apamea remissa*). This was a species that I had been looking out for, thinking that I might be missing it among others of the genus. Only one came to actinic on 2nd July but it was distinctive enough for me to be sure that this was the first I had seen.

Small dotted buff (*Photedes minima*). This was recorded in some numbers at the riverside location but it has never appeared in the garden. First date, 11th July.

Brown-veined wainscot (*Archanara dissoluta*). One came to m.v. on 22 July. This was of the form *arundineta*.

Fen wainscot (*Arenostola phragmitidis*). Noted at m.v. from 16th July in reasonable numbers.

Marbled clover (*Heliothis virescens*). One came to m.v. in the garden on 15th August. No other evidence of immigration was noted during this period but that remains the most likely source of this individual. (However, a second has appeared at m.v. on 7th August 1994.)

Straw dot (*Rivula sericealis*). Several came to m.v. after 31st August.

Fan-foot (*Herminia tarsipennalis*). Numbers came to actinic on 2nd July at a riverside location. Subsequently it appeared occasionally in the garden.

I would like to thank Paul Waring for the loan of the Robinson trap, and also the owners of the site within the Ouse washes nature reserve for their invaluable assistance.

BOOK REVIEW

Saving butterflies: a practical guide to the conservation of butterflies edited by David Dunbar. Square octavo, pp80, illustrated in colour and black and white. ISBN 0 9522 602 0 4. Butterfly Conservation 1993. Price £14.95 (hardback), £12.95 (paperback).

The number of books on butterflies being published continues to increase and perhaps one of the main reasons is that Butterfly Conservation now has over 10,000 members and, additionally, has created an enormous awareness among everyone else of the parlous state in which many of our species, of which there were very few in the first place, now are. Going into the publication business themselves they are able both to choose the appropriate approach and to target a specific market, in this case all who have control over land, be they small house gardens or thousand acre farms.

This must be the first butterfly book to concentrate on conservation and is designed to create awareness of the problems and how to tackle them. All aspects are covered in a simple to understand way and no previous knowledge of entomology is assumed, so the book starts off with aspects of the butterfly's life-cycle and its ecology. There is an explanation as to why butterflies are under threat. The bulk of the book, however, covers the various habitats (grasslands, hedgerows, wetlands, gardens, etc) and how they should be managed to encourage butterflies. There is a list of the principal plants eaten by the caterpillars and nectared on by the adults. The controversial subjects of butterflies and the laws relating to them, as well as whether captive bred specimens should be released back into the wild, are discussed. Details are given as to how to record the occurrence of butterflies and the forms on which to do this are printed in the book. Of particular use in a book of this nature is the comprehensive listing of other books and of organisations from which further information on the subject can be obtained.

The fine colour illustrations are mainly of habitats and the black and white ones, which are both of individual butterflies and of dioramic views of habitats, are both well chosen and printed and greatly add to the interest and understanding of the subject. As a multi-author book the editor has done well to collate all into a homogenous whole. I do not like square octavo books since they do not fit alongside normal sized books in a bookcase, but it is a pleasure to see that the very small price difference between hardback and paperback reflects the actual production cost, and not what the publisher thinks the market will bear. Congratulations to BC on this issue and the book is a must for all butterfly lovers.

Brian Gardiner

THE REAL J.G. WOOD?

by Grahame Wilcox (5649)

Some years ago, an antique dealer friend sold me, quite cheaply, the entomological books from a library he had just bought. They were mainly Victorian and included Fowler's *British Beetles* which, as I was a little financially embarrassed at the time, I sold for a sum which exceeded that which I had paid for the whole collection!

One of the other works was the two-volume *A Systematic Catalogue of British Insects* by J.F. Stephens, published in 1829. This is a list of insects interleaved with blank pages for notes. In my copy there are quite a few notes made in the mid-1800s around the Oxford area – Bagley Wood is frequently mentioned.

I then noticed that both volumes are inscribed at the front “J.G. Wood Mert. Coll. 1850”. Could this be the famous Rev. J.G. Wood of so many Victorian natural history books? The preface to Wood's *Illustrated Natural History* of 1879 does end “Merton College, Oxford 1852”, so he was there at that time. I also discovered that he had been a curate near Oxford.

I decided to look in more detail at the notes. Those for the Large tortoise-shell (*Vanessa polychloros*) say:

“Oxon capt B. Wood 1847. Took one in a grocer's window in the High St 1848”.

It was therefore with some excitement that I read on page 398 of Wood's *Insects at Home* 1887:

“The first specimen that I ever took I saw in the window of a grocer's shop at Oxford”.

Perhaps he had forgotten the one at B (Bagley?) Wood the year before, or maybe the grocer's shop catch made better reading. Whatever, I still believe that my “Stephens” was once used by the great man himself.

Another good find among the books was a second edition copy of Eleanor Ormerod's *Manual of Injurious Insects* of 1890, the full title being, in true Victorian style: *A Manual of Injurious Insects with Methods of Prevention and Remedy for their Attacks to Food Crops, Forest Trees, and Fruit*. Miss Ormerod was something of an oddball in her time – a woman scientist was scandal enough, but an entomologist too? However, she was well-respected by those in her own field and travelled extensively abroad advising on insect pest problems.

I am lucky enough to have with my book a letter from Miss Ormerod to a former owner of the volume, a Mr Hughes of Chesterton, near Bicester. As I write these words on 2nd August 1994 I am fascinated to notice that Miss Ormerod's letter is dated 2nd August 1894, exactly 100 years ago. The letter

was sent from Miss Ormerod's home, Torrington House, St. Albans, and concerns the tick *Ixodes ricinus*. I hope it will be of interest if I quote the letter in full.

"Dear Sir,

I should think that almost certainly your 'tick' specimen which you have so neatly figured was the 'Dog Tick' – the *Ixodes ricinus* L.

This is a very common kind, and though known as the Dog-Tick, is to be found on various other animals – ourselves unfortunately included – for ticks are often to be found in grass and herbage, and attach themselves to those whose business or amusement make them stand about in such places.

On the continent these ticks are noted as a trouble to hunters who have to force their way through underwood.

In Murray's Aptera the scientific name of *Ixodes erinaceus* is given to the "dog tick" – but I believe that at the present day the name of *I. ricinus* has been generally adopted for it.

Yrs truly

Eleanor A. Ormerod"

As an afterthought she counsels against pulling off the ticks and suggests the application of turpentine, kerosene emulsion, or "a little soft soap and mineral oil".

With the the huge advances in our knowledge of entomology over the past century it is still fascinating to dip into the work of our long-gone Victorian colleagues.

BEDFORDSHIRE BUTTERFLIES AND MOTHS

by Charles Baker (10029)

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As part of a historical review of Bedfordshire's Lepidoptera, I have been seeking out collections containing specimens taken in the county. Recently I was very pleased to find a few specimens taken by W.G. Nash, who collected in the early part of this century. I understand that his collection was sold in the 1930s. I would be most interested to hear from anyone who has any of his specimens or indeed any others from Bedfordshire in their collection.



Fig. 1 The Argent-or, the local stream, fed by the many springs arising from the limestone.

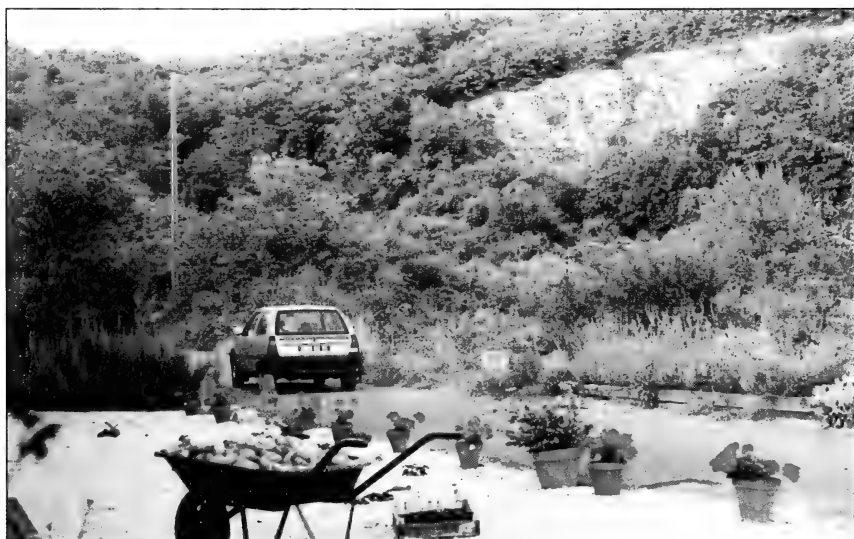


Fig. 2. The haunt of the Adonis blue, Large blue, Camberwell beauty and many other species.



Fig. 3. The Red admiral (*Vanessa atalanta*).



Fig. 4. *Thymelicus lincola*, the Essex skipper.



Fig. 5. One of the many skippers noted.



Fig. 6. A Common blue (*Polyommatus icarus*)



Fig. 7. The Speckled wood (*Pararge aegeria*)

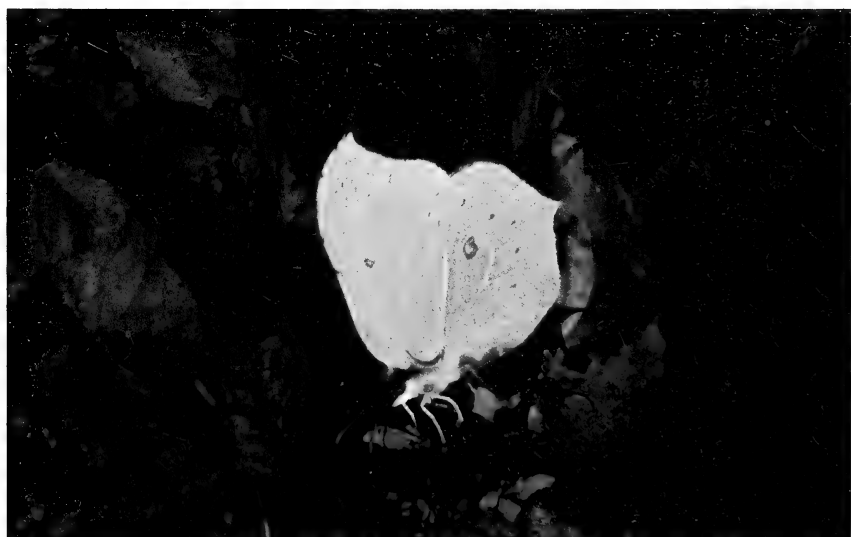


Fig. 8. *Goncopteryx rhamni*, the Brimstone.

OF BUTTERFLIES . . . SNAKES . . . AND CAMELS!

by W.J. Tennent (7756)

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Every now and then a day dawns which, when it ends, makes you wish you'd stayed in bed. Such a day was Monday, 1st August 1994. It started when, having parked my camper-van late at night on the Puerto de la Bonaigua in the Spanish Pyrenees, I was rudely awakened by the deafening sound of a mobile generator parked ten metres away and which I hadn't noticed in the dark. It was also so misty you couldn't see your hand in front of your face. So far, so good! I drove on to the Spanish/French frontier.

Since 1992, when EEC borders were opened for trade purposes, it has been quite usual to find frontiers unmanned or to be waved through. Not today. I was kept waiting for 15 minutes whilst the Spanish customs officer disappeared behind darkened windows with my passport, presumably to check with Interpol that I was not a notorious drug-smuggler. Actually this was quite reasonable since my passport is full of Moroccan entry/exit stamps and the Moroccan hashish problem is getting worse with large amounts of the drug being brought into Europe by vehicle.

By now somewhat out of sorts, I drove on. After 30km, on the road to Toulouse, a French customs van was parked at the roadside and, selected from a cast of several, I was pulled in. With my passport held by one of them, the other rummaged through my belongings in the way of officials the world over. I should explain here that I had been in Morocco for most of the previous five months doing field work for a butterfly book on the region and had a large collection of North African butterflies in storeboxes or on setting boards.

"What is in here?"

"Butterflies."

"Butterflies?"

"Butterflies!"

Suddenly this was no longer routine; this was their lucky day; they had stopped an international criminal!

"From where?"

"Morocco."

"You have authority?"

Now this was an interesting question. There is no law or regulation against collecting butterflies in Morocco and so authority is actually not required. However, believing at this stage that I was one step ahead of them, I handed over several pages of official government authorities permitting the collection and study of butterflies in Morocco, Algeria and Tunisia which I had obtained in the name of co-operation, even though, in Morocco, it was not strictly

necessary. Each page was carefully scrutinised, but then, instead of my passport being returned, I was taken (arrested I suppose, since there was no choice) the 30km back to the frontier gendarmerie station, with one customs officer in my van and the other following in his own vehicle.

I enquired why, when I had produced comprehensive written authority to be in possession of the butterflies, I was now being arrested, but it seemed there was no reply to be had, other than a shrug of the shoulders. At the police station I was obliged to show a sample box of butterflies to the seven customs officials and policeman who, having nothing better to do, were gathered around the van. I asked the same question of *Monsieur le Chef*, a small man who obviously spent much of his time under a sun-lamp. This time my question was completely ignored. Telephone calls were made and dusty volumes consulted, to whom or on what subject I have no idea, and eventually I was told to bring all the boxes inside the police station.

Concerned about the effects of humidity on the specimens (the mist was swirling about even at this low level), I protested strongly that since they had by now all read my authority (all written in French I might add – there can have been no confusion), this was just too much. *Monsieur le Chef* appeared to consider my outburst.

“You have anything else?”

“Yes, some dried plant material.”

This was of no interest. He placed himself squarely in front of me and looked me in the eye in order to detect any glimmer of fear in response to his next question,

“You have any ...” (he thought carefully) “... snakes?”

“No”, I replied and, in an effort to anticipate his next question and in a desperate bid to be helpful, added “... and no camels!”

Have you ever noticed how humourless officialdom can be? This was deemed unamusing and it took four journeys to and from the van to take all the boxes into the police station. At this stage a drug-sniffer dog arrived with handler (*one* of the telephone calls explained) and, after less than 20 seconds inside the van, declared it clean as a whistle.

By this time, since more than four hours had elapsed and I had a long way to drive, I was pretty irritated. The dog handler spoke English and I pressed my original question,

“Why all this nonsense when you have seen my authority?” but was merely treated to more shrugs. Half an hour later I heard the word *apollo* mentioned by one of the officials on the telephone and leaped into the conversation,

“I understand *apollo*; I understand CITES; there are no butterflies subject to any form of international protection in North Africa; why don't you look in all the boxes?”

This went down quite well and we all retired to the police bar, where the boxes had been placed. On the way, I heard one of them say to his colleague:

“Do you know what an *apollo* looks like?”

“Oh, yes”, replied his colleague knowledgeably “It’s big!”

Thinking to myself that *Berberia abdelkader* is also “big”, I produced my “Higgins and Riley”, propped it open on the bar at the plate of Apollos and we began to examine every box.

Aside from the lack of humour, it is also noticeable with officialdom that they can collectively move, at the drop of a hat, from an officious, unhelpful attitude, to being full of *bonhomie* and an attitude of “No hard feelings, eh chum? We’re only doing our job”. This stage was reached half-way through the box opening ceremony; we stopped looking and I was offered a beer from the mini-bar in the corner. Biting back the comment that drinking and driving was obviously a less heinous offence in France than collecting butterflies, I declined and left.

And that was that! Except that, having made myself a mug of tea before driving off and placing it next to the driver’s seat securely lodged in one of my boots, something I have done safely dozens of times in the last few years, it tipped over 5km down the road, depositing half of the scalding liquid inside the boot and the other half over my bare feet! Just to finish off the day, I discovered that banks in France were on summer hours and were all now closed; I drove the breadth of France without any money, not even for a baguette. *C’est la vie!*

Although I have told this tale in a light-hearted manner, it does raise two serious issues. First, it seems that amateur lepidopterists are in need of protection just as much as butterflies. Over the years I have been stoned, had the paintwork of a new car scratched and often been subjected to verbal abuse. This latest episode, where I was made to drive 60km out of my way, held for five hours and put to considerable inconvenience was, in the lack of any explanation to the contrary, apparently harassment because I was seen to be that most wicked of criminals, a butterfly collector. It should be understood (the Swiss, who have an intelligent approach to collectors and collecting, understand) that the vast majority of field work is carried out and new information on butterfly distribution and biology provided by, amateurs who do it because they want to, for no financial reward. That has always been so and, in a world where less and less funding is available for professional entomologists to carry out field work, will remain so for the foreseeable future. Making life too difficult for amateurs may well have a detrimental effect on the butterflies in the long term.

Secondly, what is all this ridiculous fuss about *Parnassius apollo*? As anyone who has walked the hills and mountains of Europe, from Sweden to Greece and Sicily to Spain knows, it is a widespread butterfly often very

common where it occurs and is in no danger whatsoever from the activities of collectors. The legislators cannot be blamed for this nonsense since they have no specialist knowledge, nor should we expect them to have. No, it is the often faceless "conservationists", self-declared experts who sadly have in many cases little more knowledge than the legislators and whose hearts rule their heads, who are at fault. They should understand that there is a negative and potentially dangerous side to "symbolic protection" which can be compared to a three-lane highway with a 10kph speed restriction. Any driver with common-sense and experience (most have both) sees the restriction as stupid and pointless and as a consequence it is largely ignored, despite the threat of a penalty. So it is with protecting butterfly species which clearly don't need it. Without exception, European entomologists I have spoken to consider the law an ass or worse; there is a real danger of all such legislation, some of which is necessary and protects species in need of protection, being ignored as a result. Consultation and intelligent, reasoned discussion, so far lacking, are badly needed.

My tale ends, as all tales should, with a twist. I had climbed Djebel Toubkal, at 4167 metres, the highest peak in North Africa, a couple of weeks prior to Black Monday and slept overnight in a refuge below the summit; the mattress had obviously been slept on by thousands before me and was a veritable El Dorado of entomological wildlife, all unwelcome. Preferring life on the road to the rigours of a Moroccan winter at high altitude, some of the wildlife decided to accompany me and since then I had been bitten by an unidentified and quite vicious "something", which had defied all my attempts to dislodge it from body/clothing by spraying or scrubbing. It never bit me again and I rather think the sight of so many smart uniforms proved irresistible. I shall carry with me for a long time the fond thought of French customs officials being kept awake at night by a vicious beast well and truly inured to Shellox, DDT and wash powder. I do hope it's subject to CITES protection!

A GAS LIGHT ENTOMOLOGIST

by Jan Koryszko (6089)

I was most interested in the note by Chris Gardiner, Vol 53: 39 – *Sales of the unexpected*. What a January sale! I would have loved to be there. I am always on the lookout myself in old bookshops, antique shops and the like for bug books and entomological journals, as well as anything to do with entomology.

I am lucky myself. I work at a jeweller's, photographer's and picture framer's – William Williamson Ltd of Longton – still going strong after 80 years. They have moved with the times while retaining an atmosphere and look which is reminiscent of bygone years. Step inside and you turn back the clock. We have just won a Potteries heritage award.

I work in the photographic and picture framing department. This puts me in touch with old and interesting works of art, and old photos which people bring in for us to reproduce.

Every picture tells a story by its owner. A few years ago I met a very interesting man who came into the shop and who is now a regular customer and good friend. This is Mr John Shaw. He told me he was the grandson of the well-known Staffordshire entomologist, the late Edward Shaw who was the head postmaster at Stoke railway station in the late 1880s. He was a Victorian collector and collected until around 1925 when he died. Most of his records came from gas lamps around Stoke station, but he also collected all around the country.

John Shaw never met his grandfather, but John's father told him all about him. He remembers the house they used to live in at Butler Street, Stoke, close to the football ground. He remembers the smell of mothballs from the cabinets, butterflies and moths on the old setting boards, piles of notes and records, larvae and pupae in containers, the odd butterfly flying around the house, and piles of books.

Edward Shaw was a member of the North Staffs Field Club and many of his records appeared in their transactions at the time. He remembers entomological meetings at the house, with gentlemen in top hats and capes and a number of priests wearing gaiters and black hats and capes. They looked quite sombre. Edward gave talks in the evening at the house, and other entomologists brought their specimens to the house to show him.

After his death the large collection in the cabinets and store boxes were stored, for an unknown reason, at Fenton Town Hall and forgotten about. It must have been many years later that they were found again when the room they were in was being cleaned out. The cabinets were under piles of rubbish, gathering decades of dust. The specimens were in poor condition, attacked by museum beetles, booklice and damp and decay; some were just piles of dust. The specimens which survived were finally taken to the City Museum, Hanley, Stoke-on-Trent in their cabinets and store boxes, where they remain to this day. All of Edward's notes and papers were also stored at Fenton Town Hall but the staff, when clearing out the room at the Town Hall, burned them and they perished.

John's father died some years ago, and his mother went into a home around four years ago. So John had the task of clearing out his parents' house. One day he came into the shop with some old brass or copper glass-bottomed pillboxes which had gone a green colour, along with a very old setting board with old black entomological pins and some small collecting boxes – no doubt some of Edward's equipment from all those years ago.

Then, two weeks later he found an old notebook with some pages missing. Inside were notes of collecting trips he made, very short and brief. A name which appeared in the book was Mr B. Bryan which I have seen in the old transactions of the North Staffordshire Field Club. Then, to my surprise, he showed a copy of the *Illustrated Natural History of British Butterflies and Moths*, by Edward Newman, FLS, FZS. It was very dusty with a broken spine, the pages loose and foxed, but still intact. When I opened the book, I could feel the rush of adrenalin when I saw Edward Shaw's own records by each illustration with his initials by species he had encountered on his collecting trips, dates and places given, in Staffordshire. He also had lots of records from Bewdley, Worcestershire. All notes were written in pencil. What a find! There were hundreds of records inside, some very rare in the county such as the Large footman (*Lithosia quadra*, L.) and Golden-rod brindle, (*Lithomoia solidaginis*, Hubn.) both seen at Stoke station, at gas lamps, in 1905.

I purchased the book from John with a photo of Edward Shaw, which I now treasure. When I thumb through the pages of the book I can picture Edward Shaw collecting round the old gas lamps at Stoke railway station, with the old sounds of the steam trains pulling in, through the smoke and grime of the old kilns of the Potteries.

RECORDING OUR WILDLIFE

by Peggie Pitkin

An article on spiders by Jan Koryszko made me wonder if we do not keep our recording to too narrow a circle. Would it not be better not only to study the habitat but why the food source grows in that particular place, the geological structure of the soil, the climate? If, say, a beetle lives on a particular plant, would the beetle live on another should the first not exist if conditions were different? Does it all boil down to geological construction, the source of everything?

I think we need to become general naturalists otherwise we become number collectors as are the twitchers of the bird world. Would recorders of spiders be splitchers or of beetles blitchers? I-myself am a general naturalist and when on my meanderings note everything I can. It is quite amazing what one learns, how one thing depends on another; one's knowledge accumulates over a period of 33 years in one place and a naturalist for nearly a century!

I would be interested to hear other points of view on this subject.

DRAGONFLY DAYS

by Roy Goff

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I have always been interested in natural history of all kinds since being knee-high to the proverbial grasshopper. However, I have never restrained myself to any one particular field of study. I am also a “do-er” rather than a casual observer, therefore I do not find birdwatching particularly entertaining but if wishing to have some time with birds I will go out with some nets and catch birds for ringing – something I enjoy tremendously. With entomology I like similar levels of involvement. A friend introduced me to Hammond's book, *The Dragonflies of Great Britain*, which set me off chasing these lovely insects and finally being able to identify the species accurately. I know that this book has done a lot to stimulate enthusiasm in dragonflies but what I wish to convey is not just how interesting this group is but how simple real value can come just by taking a closer look and subsequently taking the time to report what you find.

I moved back to Rutland soon after coming across the book and so set about doing my own survey of the county by visiting as many different types of aquatic habitat as I was able. Rutland is only a small county which is lumped with Leicestershire for most purposes and is often treated as an annex when surveys are considered but to me it will always come first.

Among the first things I noticed were how few records existed even though we have an enthusiastic natural history society in Rutland, and also that many were misidentifications. A simple slip of the pen and we seem to have Common hawkers (*Aeshna juncea*), all over the county except that the commonest hawker in Rutland is the Southern hawker (*A. cyanea*). However, observers usually have limited identification guides, or are simply unaware that a difference exists. A similar situation occurred with the Common darter (*Sympetrum striolatum*) and the Ruddy darter (*S. sanguineum*).

Many of the early records came from the survey taken prior to the flooding of the Gwash valley for the creation of Rutland Water and the sites no longer exist. Some of these records relate to the sole sighting for some species. All this adds up to is a very poor picture of the dragonfly fauna in a relatively small area. This is likely to be a similar picture for many readers and can so easily be changed.

I sent my observations in to the Rutland Natural History Society for publication in their newsletter. A subsequent article on identification of the species likely to be found created interest and records began to increase from the membership. These records find their way to the Leicester Museum via the RNHS and I also submit my own to the Odonata recording scheme so

they are registered nationally. There is a certain pride to be gained by knowing that you have personally added dots to the next series of maps to be printed.

All this is fine, but what of the dragonflies themselves? My first "find" was that of the emerald damselfly (*Lestes sponsa*), previously recorded once from the Rutland Water site and then only a few individuals. The very first pond I looked at contained over a hundred of these beautiful insects. Of the next four sites two more also had flourishing colonies. This was no new occurrence but simply no-one else had looked at the damselflies before. They have now been found at more than ten sites. A similar thing happened with the white-legged damselfly (*Platycnemis pennipes*) – it had always been there but it was a new find for me. The red-eyed damselfly was a known colony nationally but not to the Rutland Natural History Society. They were annoying to find: the adults had a different flight pattern from what I had seen and they would not come close enough to the bank to be identified. They have large eyes which give the head an over-sized appearance, I was beside the canal for more than half an hour before I was able to get close to one and believe me I was ready to murder the little blighter by then. Once you get used to them they are really quite easy to spot but these were my first and they at least became memorable.

Another memorable day was a beautiful hot one at a local quarry. I had taken a friend of mine to see a colony of Marbled white butterflies and had spent some time watching them in the company of Grizzled and Dingy skippers, amongst a good butterfly day. We also saw three species of orchid, common lizards and an adder when I decided to take a look at some water which was almost devoid of vegetation and so not particularly promising.

As soon as we reached the water's edge a large blue dragonfly flew up and vanished around the corner. This was a new species to me so I quickly gave chase. Rounding a large pile of earth and rock I came to a shallow bay where the water teemed with common blue damselflies (*Enallagma cyathigerum*), and was regularly punctuated with these lovely large dragonflies. True to form none of them would come within twelve feet of the bank. Whilst desperately trying to get a close view to observe as much of the pattern as possible I suddenly noticed that there was a large blue hawkler patrolling a little further out. It could only be an emperor dragonfly (*Anax imperator*), but I had never seen one before and I knew that in Rutland we were right at the edge of their range. There was no alternative – I had to confirm both species. My friend cherishes the photo he took of me minus socks, shoes and trousers, standing in the pond with a net in one hand and a camera in the other. I managed neither to net one nor take a single photograph but I was able to confirm the first sighting for Rutland of the black-tailed skimmer (*Orthetrum cancellatum*) and prove breeding; and the second confirmed sighting of the emperor. An excellent day out.

Dragonflies are often found away from water and can really brighten a day's outing by their unexpected appearance. Two such occasions were visiting a village fete which is some unique form of punishment my wife enjoys inflicting upon me. We were having afternoon tea in the vicar's garden on a very breezy afternoon when I noticed eight hawk dragonflies swooping, a few feet off the ground in and out of the tables as various families sat on the grass. We were all taking shelter by virtue of a high stone wall which surrounded the garden.

The second surprise was when I visited a railway line to cut scrub in spring in similar weather conditions. Deciding it was too late in the year for cutting I sat for coffee in a small clearing that I had cut on previous occasions when a small hawk dragonfly popped over the trees and inspected my clearing. It then beat a short patrol as if hunting but then swooped down to sit on the remains of my last bonfire. I crept closer until only a few feet away and wished I had brought my camera so I could have photographed my first and only hairy dragonfly (*Brachytron pratense*). This insect was also the first for both Rutland and Leicestershire.

The species list for Rutland is now at 20 which for an unremarkable county is very good, being more than half our resident species. I cannot claim to have done anything other than show what really is out there if you wish to find it and thoroughly enjoy these beautiful insects at the same time. The rest is up to you.

BOOK PRICES – A REPLY

by Keith Lewis (3680)

In reply to Richard Jones's letter (*Bulletin* 53: 138) in defence of the bookseller, it appears he has not grasped the point I was attempting to make in my letter (*Bulletin* 52: 203). I was not talking about new books in general but books bearing ex-library or college cancellation marks, ie. text books, which sell in most cases for a few pence.

Like Mr Jones, I too have collected all types of books over many years and in that time I have come to use two or three booksellers who in my opinion give excellent service and price. To give you an example, I have recently purchased the book *Kashmir*, published 1911, for the price of £10, which contains 70 coloured prints of India. If this book had been purchased by an unscrupulous seller he would have torn the book apart for its plates which he could sell on for, say, £8 each – a mark-up of £560. If you doubt my words, go and have a look around any market in London.

In conclusion, I would say: find a bookseller you can trust, and build up a good relationship with the shop; it will pay dividends in the long run

BOOK REVIEW

Invertebrates of Wales: a review of important sites and species by Adrian Fowles. A4 hdbk. 157pp, well illustrated in colour and black and white. ISBN 1 873701 55 1. Joint Nature Conservation Committee, nd (1994). Price £24.50 (+ £3.00 p&p).

As in the case of several other recently published books, this one is broader in its scope than being purely entomological. This indeed makes sense as the present-day interests of naturalists are switching from the purely collecting and taxonomic viewpoint to the study and understanding of the interaction of communities, so important to deciding on the correct management scheme for conservation, and not just the study of one particular Order. Nevertheless, since insects are the most abundant invertebrates, both in number of species and sheer numbers, they do occupy the bulk of this book.

The subject matter concentrates on the rarer and more specialised Welsh invertebrates with particular reference to their ecology and distribution. For this purpose Wales is divided into three regions; north, Dyfed/Powys, south. The author has carried out extensive field work in the Principality and has trawled back over the literature on the area which has been published since 1840 when both *The Entomologist* and *Zoologist* were founded.

The text is remarkably well written and easy to read and there are a lot of commonsense observations concerning the difficulties of conservation, such as the problems of getting farmers to rent unimproved grassland for their cattle and the damage caused to invertebrates if it has to be mowed instead. A study of the map on page 112 indicates that the notable sites are well-distributed throughout Wales and these are all given a brief description.

The illustrations are a good mix of invertebrates and habitats. There are a selected bibliography and three separate indices: general, localities, species. Neither the colour plates nor any of the separate illustrations are numbered, and while this is disconcerting a trial of ten or twelve items in the index did show that the invertebrate or habitat illustrated was mentioned on the same or adjacent page. I also have the personal view that I dislike irregular lines and in a book of this size, A4, double column printing could well be right justified. It is also a serious oversight that a book of this importance does not bear a date of publication, and at its price it should be in stronger binding. Although a hardback the boards are covered in thin paper and the joints will soon crack with use. The contents, however, are indispensable to anyone studying invertebrates in Wales, or indeed the English Marches, and contain useful information wherever one's site of study may happen to be.

Brian Gardiner

APHIDS IN A SHROPSHIRE VILLAGE

by S.C. Littlewood (6525)

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Aphids hardly ever merit a second glance, since, like most insects, they are small and it is generally only the size of the colonies on the tips of broad beans, or on rosebuds, which make us notice them at all. These colonies, stemming from a single individual seeking a fresh food supply, give no clue to a most remarkable insect's lifestyle.

Two hundred years ago, Gilbert White wrote that “. . . at about three o'clock in the afternoon (of 1st August 1785), the people of this village (Selborne in Hampshire), were surprised by a shower of aphids . . . which fell in these parts. These armies were then, no doubt, in a state of migration, shifting their quarters.” In rather more recent times, farmers in the North American middle-west abandoned 70% of their wheat crop, losing 50,000,000 bushels of grain, in what became known as the greenbug migration of 1907. In very recent times, hordes of green aphids, apparently migrating from the continent, caused considerable alarm and discomfort along the south-east coast of England.

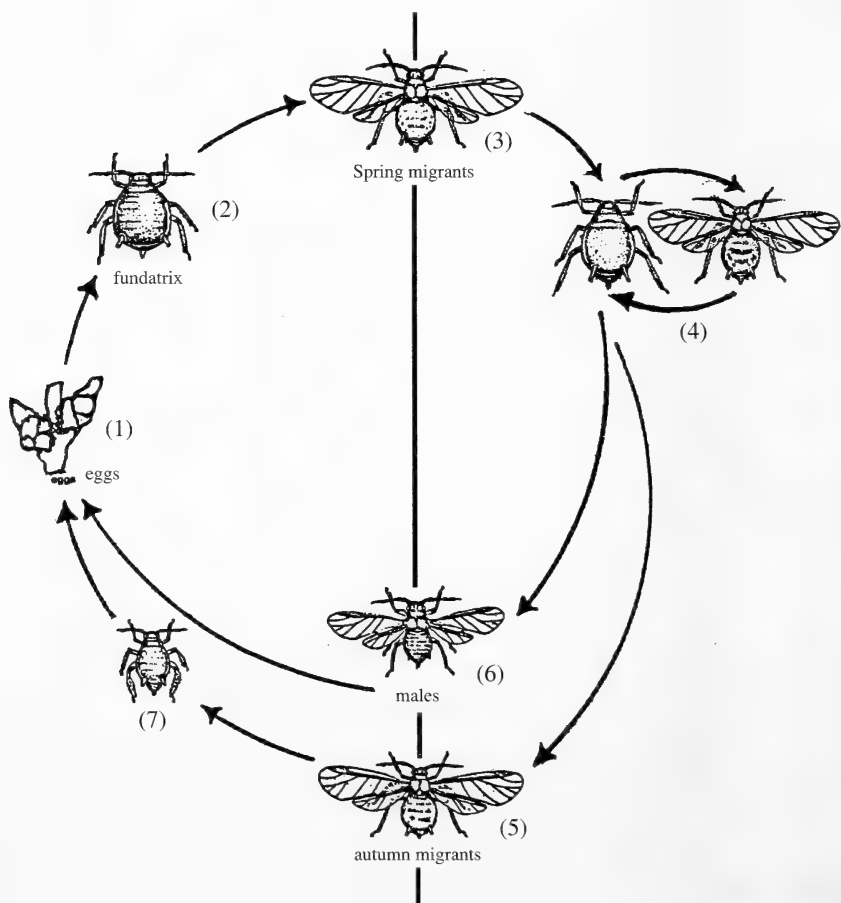
This ability to explode from populations of a few aphids to a few million in a very short time and to subside again even more quickly, is only one of the very extraordinary characteristics of this singular insect.

Aphids are very specialised plant-feeders, having no biting mouthparts, but possessing instead a proboscis, with which they pierce soft, green tissues of plants and suck up the sap. They can perhaps be regarded as parasites of the plant on which they feed. Although the damage they do by this method of feeding is quite exceptional (for example, they can reduce the width of the annual growth-ring of a fully grown sycamore), it is as a carrier of plant virus diseases that they cause the most havoc. The “yellows” which occur in sugar beet, and which may well reduce the field-yield by as much as 50%, are caused by several viruses, all transmitted by, among others, the peach-potato aphid (*Myzus persicae*), which has an outstanding ability to survive the winter and start re-infecting as soon as weather conditions are suitable again. This, however, is not the whole story, for the same aphid has been shown to transmit as many as 90 other virus diseases, affecting crops as diverse as tomatoes, freesias and watercress. Only about 9% of the estimated world total of aphid species have been tested for virus transmission and, of these, a mere 2-3% of possible virus-aphid combinations have been investigated. Thus, only a very small fraction of the complete picture has so far been filled in.

It will have been noted that the aphid mentioned above (peach-potato aphid), was named for two different plant species. Many of the common aphids have been given double names, which refer to both the host on which

they generally overwinter and the common summer host, to which they migrate. *Myzus persicae* is perhaps a poor example, since it will overwinter in the centre of brassicas, in mangold clamps, on stored potatoes and in glasshouses. Aphids with single common names (and the effects of whose feeding you may well have come across) are the large green sycamore aphid, the elder aphid and the lime aphid which drips honeydew all over cars parked in the shade of lime trees.

It is not easy to describe, in simple terms, the life-cycle of an aphid, since not only is it very complex, but several technical terms are necessary. The accompanying diagram shows, in a simplified fashion, the life-cycle of the black-bean aphid, which is perhaps the most familiar of aphids and has a life-cycle which is typical of many others.



The winter is passed as a clutch of eggs (1), laid close to the buds of the spindle tree. In spring, these eggs hatch into wingless females, which feed on the sap of the young swelling buds. These aphids are known as *fundatrices* (2) but, as the limited food-source becomes rapidly less suitable, they produce (without mating) winged, migrant females, who move to the tips of broad beans and other summer hosts, there to found colonies of wingless females. As these colonies continue to grow and the food supply again begins to deteriorate, more winged females are produced, migrating to better food sources and founding more colonies. This cycle of wingless virgins and winged virgins continues throughout the summer (4) until September, when fresh, tender plant tissue is becoming scarce. It is then that a different kind of winged female is produced (5) which, although not readily distinguishable from its predecessors, becomes the parent of wingless sexual females, this time on the stems of the spindle tree. At the same time, and for the first time, the last colonies of the summer hosts produce winged males, who also fly to the spindle tree, there to mate with the wingless females (7). About six eggs are quickly laid on the winter buds, where they remain, impervious to the worst of winter weather, until the following spring.

Something like 500 different species of aphids have so far been identified in Great Britain and, of these, the following 101 species were recorded in the village of Rowton near Wellington. They were caught in a simple yellow wet trap, which consists essentially of a shallow pan, painted brilliant yellow on the inside and containing water to which a little detergent has been added, so that the insect will break the surface tension of the water when it alights and will not be able to escape.

<i>Acyrtosiphon loti</i>	bird's-foot trefoil aphid	<i>A. speyeri</i>	lily-of-the-valley aphid
<i>A. malvae</i>	geranium aphid	<i>Brachycaudus cardui</i>	prunus-composite flowers aphid
<i>A. pisum</i>	pea aphid	<i>B. helichrysi</i>	plum-composite flowers aphid (causes plum leaf-curl)
<i>A. primulae</i>	primula aphid	<i>Brevicoryne brassicae</i>	cabbage aphid
<i>Amphorophora rubi</i>	blackberry aphid	<i>Callipterinella calliptera</i>	birch aphid
<i>Anoecia corni</i>	dogwood-grass roots aphid	<i>Capitophorus elaeagni</i>	buckthorn-thistle aphid
<i>Anuraphis subterranea</i>	pear-hogweed aphid	<i>C. hippophaes</i>	buckthorn-polygonum aphid
<i>Aphis corniella</i>	dogwood-willow herb aphid	<i>C. horni</i>	thistle(s) aphid
<i>Aphis fabae</i>	black bean aphid	<i>C. similis</i>	buckthorn-colt's foot aphid
<i>A. idaei</i>	raspberry aphid	<i>Cavariella aegopodii</i>	carrot-willow aphid
<i>A. nasturtii</i>	buckthorn-potato aphid	<i>C. archangelicae</i>	willow-angelica aphid
<i>A. pomi</i>	green apple-aphid	<i>C. pastinacae</i>	willow-hogweed aphid
<i>A. rumicis</i>	permanent dock-aphid	<i>C. theobaldi</i>	willow-hogweed aphid (uncommon)
<i>A. sambuci</i>	elder-pink family and dock family aphid	<i>Ceruaphis eriophori</i>	viburnum-cotton grass aphid
<i>A. sp.</i>	Related to black bean-aphid, not easily distinguishable.		
<i>Aulacorthum solani</i>	glasshouse potato-aphid		

<i>Cryptomyzus ballotae</i>	black horehound-white deadnettle aphid	<i>Myzocallis</i> spp.	One species on chestnut and oak; other spp. on oaks – difficult to distinguish
<i>C. galeopsidis</i>	currant aphid	<i>M. coryli</i>	hazel aphid
<i>C. korschelti</i>	mountain currant-hedge woundwort aphid	<i>Myzus ascallonicus</i>	shallot aphid
<i>C. ribis</i>	redcurrant-blister aphid	<i>M. cerasi</i>	cherry blackfly aphid; migrates to <i>Galium</i> in summer
<i>Drepanosiphum acerinum</i>	maple aphid	<i>M. certus</i>	chickweed aphid
<i>D. platinoides</i>	sycamore aphid	<i>M. ligustri</i>	privet leaf-rolling aphid
<i>Dysaphis</i> spp.	hawthorn aphids – difficult to separate: produce galls; move to parsley family in summer, concealed/underground	<i>M. lythri</i>	prunus-purple loosestrife aphid
<i>D. plantaginae</i>	rosy apple-aphid– moves to plantains in summer	<i>M. ornatus</i>	violet aphid (but many hosts)
<i>D. pyri</i>	pear-bedstraw aphid	<i>M. persicae</i>	peach-potato aphid
<i>Eriosoma ulmi</i>	elm-gall aphid: moves to <i>Ribes</i> roots	<i>Nasonovia pilosellae</i>	mouse-ear hawkweed aphid
<i>Euceraphis punctipennis</i>	birch aphid (<i>E. betulae</i> is found on silver birch)	<i>N. ribis-nigri</i>	currant-lettuce aphid
<i>Eucallipterus tiliae</i>	lime aphid	<i>Ovatomyzus calamintae</i>	calamint aphid
<i>Hayhurstia atriplicis</i>	goosefoot aphid	<i>Ovatus crataegarius</i>	hawthorn-mint aphid
<i>Holcaphis</i> spp.	grass aphid (leaf-rolling, hard to distinguish)	<i>O. insitis</i>	hawthorn-gypsywort aphid
<i>Hyperomyzella rhinanthi</i>	redcurrant-yellowrattle aphid	<i>O. mentharius</i>	mint aphid
<i>Hyalopteris pruni</i>	mealy plum-aphid	<i>Pentatrichopus fragaefoli</i>	strawberry aphid
<i>Hyperomyzus lactucae</i>	currant-sowthistle aphid	<i>Periphyllus acericola</i>	maple-sycamore aphid
<i>H. pallidus</i>	currant-corn sowthistle aphid	<i>P. testudinacea</i>	maple-sycamore aphid
<i>Kallistahis basalis</i>	birch aphid	<i>Phorodon humuli</i>	hop-damson aphid
<i>K. betulicola</i>	birch aphid – mostly on seedlings	<i>Phyllaphis fagi</i>	beech aphid
<i>Linosophon galeophagus</i>	bedstraw (family) aphid	<i>Protrama ranunculi</i>	ranunculus root aphid
<i>Longicaudus trirhodus</i>	meadowrue-rose aphid	<i>Rhopalomyzus loniceriae</i>	fly honeysuckle-grass aphid
<i>Macrosiphoniella artemisiae</i>	mugwort aphid	<i>Rhopalosiphoninus staphylae</i>	tulip aphid
<i>M. sejuncta</i>	yarrow aphid	<i>Rhopalosiphum insertum</i>	oat-apple aphid
<i>M. tapuskae</i>	yarrow-chamomile-mayweed aphid	<i>R. nymphaeae</i>	water lily aphid (and other water plants)
<i>Macrosiphon euphorbiae</i>	potato aphid	<i>R. padi</i>	birdcherry-grass aphid
<i>Macrosiphum funestum</i>	blackberry aphid	<i>Sitobion avenae</i>	grass aphid
<i>M. gei</i>	water avens aphid	<i>S. fragariae</i>	blackberry-grass aphid
<i>M. rosae</i>	rose aphid	<i>Subsaltusaphis</i> spp.	cottongrass aphids
<i>Megowella purpurea</i>	meadow vetchling aphid	<i>Tetraneura ulmi</i>	elm-grass roots aphid
<i>Metopolophium albidum</i>	rose-oat grass aphid	<i>Tubaphis ranunculina</i>	ranunculus aphid
<i>M. dirhodum</i>	rose-grain aphid	<i>Tuberculoides annulatus</i>	oakleaf aphid
<i>M. festucae</i>	grass aphid	<i>Thuleaphis ranunculina</i>	sorrel aphid
<i>Microlophium evansi</i>	nettle aphid	<i>Uroleucon</i> spp.	Many species, feeding on composite flowers, some not easily distinguishable
<i>Myzaphis rosarum</i>	rose aphid	<i>U. tussilaginis</i>	colt's foot aphid
		<i>Wahlgreniella arbuti</i>	strawberry tree-rose aphid

Details of all the above records are lodged with Dr Jane Mee, Shropshire Biological Records Centre, at the Ludlow Museum (Old Street, Ludlow). Any additional records from readers would be most welcome.

Acknowledgements

I am most grateful to Miss Maureen Dupuch of the Rothamsted Experimental Station, Harpenden, Hertfordshire and to Dr V.F. Eastop of the National History Museum, for the great assistance they have given me in preparing this account. The diagram illustrating the life cycle of the black bean aphid is redrawn from *Aphids* by Roger Blackman, by kind permission of Ginn & Company Ltd.

SON OF SILVER Y: NOTE ON *AUTOGRAPHA GAMMA* L.

by Don McNamara (5537)

6 Fulham Close, Hillingdon, Uxbridge, Middlesex UB10 0SU.

1994 was, and still is (September), a good year for these lively moths, seen in great numbers whenever and wherever I've been moth-hunting.

In West London (Uxbridge) and in Buckinghamshire (Denham) every expedition revealed hordes of them dashing about in the fields around the Colne River complex – also on the South Downs (Brighton, Hove and Portslade) and on the North Downs (Dorking, Westhumble and Box Hill) great numbers of these greyish-brown moths occupied the fields during late July and throughout August.

The West was also inundated: the Cotswolds in particular – and in the Forest of Dean (Newnham-on-Severn), they were very common, flying to light in houses and pubs causing much comment – so many being noticed by local observers.

Of course it is possible that among them were numbers of the Plain golden Y, *Autographa jota*, the Beautiful golden Y, *Autographa pulchrina*, and other similar noctuids, but having inspected many moths, which were almost certainly *Autographa gamma*, I'm sure that Silver Ys were in the majority.

It seems that from May onwards a substantial immigration of the Silver Y occurred which added to the indigenous population. Mostly these moths were somewhat "tatty" and dull, no doubt due to their having travelled great distances and because of their energetic habits, but on the 8th September (1994) I saw a freshly-emerged specimen on a gatepost in Hillingdon, Middlesex, a pristine moth with its intricately-patterned wings and subtle colouring showing just how beautiful they can be.

The Ice Has It

Before the cold comes again
and in our curious time
we drill the ice for tales of yore

of pollen from ancient flowers
spores from the silent slimes
see a change of climate that

tipped the edge of life
beyond the hopeful mammoth
and the shrew

that gnashed the dusty eggs
of dinosaurs alike were
pummelled by new

cold cliffs white blankets
harsh and grinding
mosses, leaves alike

and look for signs
beyond the dragonflies
frozen in the sediments

printed in coals
when layered coals
were ferny trees

and hopefully like bees
in amber from the past
we seek the butterfly

that grew with flowers
and flew in early gloom
of glades put down

its tundra mark
before the ice returned
from whence it came

Don McNamara (5573)

CORRECTION TO EXHIBITION REPORT 1993

The exhibit attributed to Mr D. Hall (*Bulletin* 53: 172) was in fact produced by Mr Hall and Mr P.J.C. Russell. Apologies to Mr Russell for this omission.

MANY MILES OF MOTHS – A REPORT OF THE “MOTH-A-THON”, 14th-23rd JULY 1994

by Dominic Couzens (10049)

31 Richmond Park Road, London SW14 8JU.

First, an explanation. The “Moth-a-Thon” was a charity event to raise money for the Surrey Wildlife Trust. The idea was to find as many moth and butterfly species as possible within the ten-day period 14th-23rd July 1994, all within Surrey. Potential sponsors would offer a sum of money per species. All species had to be found within walking distance of a circuit chosen more or less at random by myself, according to the places of abode of people whom I knew well enough to cause them minor hassles and breaking of routine! A few of the moth-trapping sessions and walks were open to all comers, who were requested to make a donation to add to the overall sponsorship. As appropriate for a conservation event, the moths and butterflies were not killed and collected, only observed, with the exception of a handful of individuals which were taken away for examination as part of the Surrey Moth Atlas project.

I was most fortunate to be helped by several moth experts, notably Graham Collins, the moth-recorder (yes, they do exist!) for the county of Surrey. Thanks to his help, all records from the “Moth-a-Thon” will go into the Surrey Moth Atlas, which will, when published, give valuable information about the distribution of these insects in our county. Such information will, in turn, be of use to conservation.

It will be of interest, as you read the following, to know that every single species was worth about £5.50 of sponsorship money. It puts a very different complexion on lists of species!

14th July

The ceremonial switching-on-of-the-trap occurred at precisely midnight, to declare the 1994 “Moth-a-Thon” underway. The night was mild, with high cloud, and above all, dry. Moths soon began to arrive, vying for the distinction of being first. The flew around like . . . well, moths to flame, really. The first to fly the flag? A Riband wave, what else?

The ceremonial morning-examination-of-the-trap revealed 24 species, with no great surprises, although there were 49 Heart and darts and 38 Riband waves. The most significant species was the Setaceous hebrew character, which did not crop up again during the whole “Moth-a-Thon” – a species we dread finding on demonstration moth-trapping sessions, as its name is guaranteed to put any beginner off.

"Twenty-four species: that's £132 for the Trust if I get no more at all!", I brooded. Such monetary thoughts were to dominate my life for the next ten days.

The day had begun hot and sunny, ideal for butterflies. They swarmed around the thistles in Richmond Park, then decorated every flowerhead between Richmond and Hampton. I was joined on this riverside walk by Roger and Judith Davies, who, being locals, knew all the sort of information that the guidebooks do not contain. One of the more surprising finds was the sight of a policeman on a large chestnut horse, consulting his A to Z as he rode along the towpath. Almost worth an extra species, along with the twelve common butterflies that we did find.

A dozen or so people attended the Molesey Heath walk that evening, hosted by Derrick and Olive James. Birds on the Heath included several common terns and a dashing hobby, hunting swallows, martins and dragonflies. (But who cares about dragonflies? It's moths we want!)

The Molesey Experience was partly a gastronomic one. Moths or no moths, I knew the Moth-a-Thon had to be a good idea, since it guaranteed me ten free dinners. Our brave birdwatchers were still indulging in tea and biscuits when Graham Collins turned up in the evening to turn to matters macrolepidopterological.

Two traps were set up on the Heath, powered by a generator. Moths came thick (Large yellow underwing) and fast (Elephant hawk-moth, which on a good day can almost take your head off). Although the temperature was a little lower than ideal, the night remained dry and generally good for catching moths. The absolute ideal is a hot, sultry night, which brings them out like teenagers to a rave. But, no matter, we were drawing them in, writing them down, pauperising our sponsors with every flutter of novel wings.

Graham summed things up as the lights went out at 1.00am and we hauled the equipment into his Land-Rover.

"A good selection of South London moths," he said. How disparaging! But we were up to 71 species now.

15th July

I hadn't realised what "The morning after" meant until I started trapping moths! Warily, the lists were checked – no extraordinary species, but several – Rustic, Sandy carpet and Yarrow pug – which would not be seen again on the event. It was also crystal clear that my estimate of 100 species as a "Moth-a-Thon" total was going to be hopelessly pessimistic unless it rained and blew a gale for the next week. What to tell the sponsors?

The trap in Derrick and Olive's garden was to provide no relief, just more moths. A Swallow-tailed moth – elegant and so fragile, the one-and-only Buff ermine of the walk and, about as exciting as its name, a Small dusty wave.

And so, with a Small dusty wave I bade farewell to the Jameses and headed south and west Ottershaw-wards. The day's walk (actually it began at noon) was under the only greyish skies of the period. I think I felt a drop of rain somewhere near Walton-on-Thames, but it didn't deter two new butterflies, the Green-veined white and the Gatekeeper, inscribing their names on the overall list on a non-butterfly day.

By Ottershaw the skies had cleared for a fine night. Graham once again made the trek from Croydon; we made life easy for ourselves by setting traps just a few hundred yards from the house of Phoebe and Reg Taylor (plus Mike, Tasha and lots of Bosnians), and even easier by helping ourselves to the wine that had been provided. The moth records for here are, however, entirely reliable, and we ended the session sometime that night well in excess of 100 species.

16th July

An early examination of the Ottershaw garden trap began at 11.00am, adding quite a number of species that we had not recorded the night before. A brief recalculation of the figure left us on 113. A number of interesting species had been found on the nearby common, including a Dingy shell and a moth called the Suspected. Surprisingly, despite two traps being set in nearby woodland, the Taylors' garden provided several moths of its own, including three – the Broad-barred white, *Lychnis* and Sharp-angled carpet, which were not seen anywhere again.

The walk from Ottershaw to Pirbright was mostly along the Basingstoke Canal, a most attractive route despite going through the centre of Woking. It was a hot, balmy day which led into a hot, balmy evening, and a memorable one. It was spent at the home of David and Mary Pearce on the edge of Pirbright Common.

As the evening drew in, people came to Pirbright in droves, presumably attracted to the lights. Among 27 participants were most of the population of the village (it seemed), plus three moth experts – Graham once again, Martin Harvey and Martin Hough. The moths never stood a chance with all this expertise, plus four moth-traps. The birds, however, our first quarry, stood every chance, and took it. In two embarrassing hours we couldn't find a thing, apart from one measly, grudging stonechat. I was hoping for a hobby – after all, we had two Martins with us – but nothing. Eventually, close to “lighting-up” time, our persistence was rewarded by magnificent views of that nocturnal vacuum machine, the nightjar, not too late to lift everyone's mood

to the heights. So we were not the only moth-catchers that night: entomologists refer to nightjars and bats as "The Opposition".

"I suppose," said someone, "that if we find no moths tonight, at least we could dissect some nightjars." Fine commercial sentiments, spoken cuttingly.

But there was no need for any help. As soon as the traps were on, hordes of the beasties saw sense and gave themselves up gracefully (if you call careering round a bulb, crashing into it and diving into an egg-box graceful). The scorebook ticked over: Pine hawk-moth, Small emerald, Horse chestnut, Grey pine carpet. Almost a cheer, certainly quite a stir, arose when the first really uncommon moth of the evening turned up.

"This," announced Martin Harvey to the assembled, candlelit throng, "is a Waved black!" A Nationally Notable Species, no less. Things were going well. First nightjars, then this. Not that a Waved black is a spectacular moth, quite the opposite, but Martin had never seen one before, and when you've driven all the way from Buckinghamshire, that means something.

It didn't cause a stir, not even applause, when a fascinating, poetic sequence of moths appeared in this order: a Clay, a Dot, then a Dotted Clay.

17th July

It was really late, about 1.30am, when most of the visitors had gone home, that the rarest moth to be recorded on the whole "Moth-a-Thon" was seen. It was an Angle-striped sawfly, a migrant from the continent. The last Surrey record was twelve years ago. This was a moth that gave itself up only to the most dedicated – the two Martins, Graham and myself and our very tired hosts. We deserved it.

A curiosity of the previous night was that a butterfly had been found during a moth hunt – a Silver-studded blue roosting on the grass in the early hours. A second butterfly was added later this morning, an Essex skipper in a Surrey garden. And to complete a topsy-turvy trio, a Straw dot appeared on the walk from Pirbright to Normandy. The magic 150 species approaches, and how many more? Even 200?

The walk, on another boiling hot day, showed off the glorious countryside around Hog's Back. It was another bird walk, happily more species-rich than the night before, with goldfinches, kestrels, spotted flycatchers and that high-summer crooner, the turtle dove.

But the cloudless skies were to cost. After a superb buffet in Normandy, at the home of Jenny and Bill Garson and their children Sam and Anna, it was still clear, getting chillier, and far from perfect moth weather. Even so, a small band gathered in Wanborough Woods, still led by the admirably energetic Graham Collins, in expectation of more money-sapping moths. Under the starry skies came the romantic names – Peach blossom, Bright-line brown-eye, True lover's knot, Phoenix, Silver-ground carpet and Archer's dart.

18th July

For this night I was camped out in a Normandy garden, moth-trap by my side (well, almost). Here I was, a real explorer, braving all in the pursuit of an elusive double-century of wild and woolly Lepidoptera, out in the wild on a par with my quarry. What a hardy outdoor man I am! (Comfortable and well-fed, actually, but it doesn't sound so good.)

If the night was meant to be a poor one, mothily speaking, the inhabitants of Normandy hadn't realised it. Examination of the trap in the morning was an exhilarating, technicolor affair. All the really gaudy, spectacular species were there – the garish Elephant hawk-moth (the real pink elephant), polished Burnished brass glinting in the sun, buttery Scalloped oak, metallic Iron prominent, grass-green Scarce silver-lines. A black, white and brilliant red Garden tiger was the only one of the “Moth-a-Thon”. But the best of all was a Scallop shell, not necessarily colourful but patterned and intricate as if it had been individually crafted. Go through any moth book and it cannot fail to stand out. You'll always want to see one, and now I had.

Inevitably, the day was hot and sunny; the pattern had been set, and showed no sign of changing. It was perfect to appreciate the view from the Hog's Back itself, this ancient route over the high ground of western Surrey. Soon a small band of us collected to walk over the fields and dusty sand paths of Puttenham. The lakes at Cutt Mill provided welcome relief – at least they looked cool – and three new butterflies appeared: a Ringlet, a Brimstone and a darting White admiral. The route terminated in an Elstead pub. Wherever it had been, it would have been a pub!

Again the evening was to be a public affair, this time on the hallowed ground of Thursley Common, a name spoken in hushed, reverent terms by ornithologists and dragonfly-worshippers alike, but what of moths? To find out, Martin Harvey once more stepped into the expert's role. While most of us began looking for birds (the nightjar again, and the dartford warbler), he went “dusking”, a technical term that seems to mean no more than looking for moths at dusk. This bore fruit, but the fruit was a bore. A Marsh oblique-barred, rare but dull; new for the list, but give me a Garden tiger any time! Fortunately, most of the Thursley participants had gone home by now, escaping from the eternal gulf that divides the scientific from the aesthetic.

19th July

Overall, the night at Thursley revealed a decent cluster of new moths, including another uncommon species, the Round-winged muslin, just faintly more interesting than the Marsh oblique-bored, or whatever it was. As I prepared for bed at the home of Richard and Caroline Poyntz-Wright in Elstead, a Large emerald flew out from my shirt and flew confidently about

the room. The last few nights I've been dreaming about moths, too. I'm getting worried; what's happening to me?

I'm not sure whether Richard and Caroline were entirely sold on nocturnal flutterers last night, but they certainly were the following morning – another case of a morning's clutch of colourful moths with colourful names. A moment to realise that there is more in your garden than you ever imagined. And so on to Guildford, yet again under the hot sun. I have walked sixty miles now: the “Moth-a-Thon” is becoming an appropriate name. (Incidentally, the traps and other equipment are brought along by car.)

John and Veronica Browne, of Guildford, were the next hosts. Exceedingly tired from the last few days' demanding schedule, I cannot have been much trouble: arriving, sleeping, eating, sleeping, having breakfast and sleeping again. In between somewhere was a dinner party with the most exquisite food, herbs fresh grown in the garden, plenty of wine. But this time there was to be no public moth-trapping, just a light trap set up modestly a hundred yards from the meandering river Wey.

20th July

In the morning, a hat-trick of “cost-moths”: the Pale prominent, Bird's wing and Mouse moth. The latter is so-called because it runs around the egg-boxes like a small rodent. (Have you ever had a mouse running around your egg-boxes?) It's one of those names you have to be careful with: “Veronica, you've got a Mouse!” wouldn't have gone down well.

Today was the day of the great walk. Well, thirteen miles actually, along the North Downs Way, but a long trek in the intense heat. By Newlands Corner I had, in fact, strained a muscle in my left foot, which doesn't sound much, but was agony. In the company of Richard Poyntz-Wright, retired doctor, I limped on to White Downs but was professionally advised to stop there. Fortunately, a car had been left at this very point which took me to the next overnight stop at Westhumble, near Dorking.

And what of the Lepidoptera on this chalky stretch? Of new species we spotted six, including the Six-spot burnet, simply abounding on the downs at Newlands Corner, but mysteriously found nowhere else. A good crop of butterflies included the exotic-sounding Silver-washed fritillary, the one and only Peacock of the entire walk, and two calcareous species, the Marbled white (technically not actually a white but a brown) and the Chalkhill blue.

Ken and Val Kilburn were my next hosts, and they invited Graham Revill, a keen lepidopterist from a few doors down in the village, to join us for coffee.

“Tell me, which of your gardens has the most species of moths?” I asked innocently. The neighbours looked at each other.

"Mine," said Graham.

"Ours," declared the Kilburns. The Battle of Westhumble began around dusk: two near-neighbouring gardens, two light-traps, "Dilkusha" versus "Fairview" for the 1994 Orange Swift Award. Who would claim the most species? Would the loser be able to forgive the winner? Tension filled the air as the lights went out with the lights on.

21st July

The day actually began serenely, at Juniper Hall Field Centre, on the slopes of Box Hill. Here the Field Studies Council Official Moth-trap had been operational under the guidance of the warden, John Bebbington, and we had an appointment to check the catch. The highlights here were the Champion moths, with forewings as intricate as an Ordnance Survey map, fresh frosty lines over a wash of violet.

But soon, back at Westhumble, the spoils from last night's skirmish were counted. Each species was examined carefully to get the results as accurate as possible, as appropriate to the enormity of the situation. Tears of weeping for one, tears of joy for the other. "Dilkusha" celebrated a narrow victory of 43 species to 30, although "Fairview" did claim two species of Hawkmoth to one. Graham Revill appealed on behalf of one insignificant moth, but I had to stand firm.

"If that's a Common rustic, I shall jump in the river Mole," I said. a nervous check with Graham Collins followed that evening: it was a Coronet, thank goodness!

Thoughts of numbers continued on the short stroll across the Downs to Bookham. We were edging towards 200 species, a score surely inflated by the unusually fine weather. But would that weather continue at tonight's trapping site, Bookham Common? No worries! It was warm, slightly humid, with a moon cloaked by misty low cloud.

Once again the bird walk proved to be utterly futile. The best bird was a long-tailed tit, which is, of course, as common as muck. So too, this evening, was a somewhat exotic moth called a Black arches, zig-zagged in bold black-and-white except for an incongruously crimson body. Normally an eyebrow-raiser at least, the things were everywhere, in plague proportions, ten to a trap. After this, someone should write a novel called "Night of the Black Arches".

22nd July

Also in plague proportions tonight were traps and lepidopterists. The expert moth person total was the highest for any night, most of them from that veritable entomologists' ghetto, the Croydon area. They included my old

friend Pat Sellar who, in buying a moth-trap for my birthday last year, set off this lepidopterous adventure.

Enthusiasm raged well into the early hours as many of our previously birdily-inclined visitors became hooked and formed a torchlit procession as they moved between "tourist-traps", virtually clapping as each new species appeared from the darkness. There were several unusual species here (moths, not visitors), including the Double kidney – named for its wings, not for its portion! A curiosity of the night was the number of names prefixed by "Small" – Small phoenix, Small rufous, Small rivulet, Small seraphim, and both the Small fan-foot and the Small fan-footed wave, but then lots of moths are diminutive, so Small wonder!

A profitable night ended somewhere around 2.00am. As we left, the nocturnal atmosphere was punctuated by the sharp barking of a roe deer, and the rustle of . . . who knows what? Like the moths, so much of our wildlife comes alive at night, a great mystery upon our doorstep waiting to be discovered.

Over morning tea, at the home of Tony and Ray Tantram, the moth score was proven to be in excess of that of the England cricket team on the same day. The morning's scorecard also bore the names of both the Bright-line brown-eye and the Brown-line bright-eye, the former being what you get when you look at the u.v. bulb for too long!

An endeavour such as the "Moth-a-Thon" brings with it many satisfactions and delights, but a moment especially to savour was to follow that morning. Bookham Common was the only site on the route where the Purple emperor butterfly was possible, and since I had never seen one I was particularly keen to find it. That I did was down to pure luck; first I got lost (everyone always gets lost on Bookham Common, usually to emerge, hungry and bearded, several weeks later), then by chance I met a Butterfly Conservation Officer, who led me three-quarters of a mile to a single tree where the males were displaying high over the canopy. Transfixed, I watched them gliding high up in the sunshine, a fine and privileged sight, and mine, I felt, as a special gift. No longer was the foot a problem – I walked on air to Esher.

Still unsure about numbers, we took no chances at Meg and John Elliott's garden. As soon as the light faded, two traps were sent into commission. If piped music would have helped, we'd have tried that; if dancing around the traps had helped, we'd have tried that too! Just keep those moths coming! Just for one more night . . .

23rd July

The last day of the "Moth-a-Thon"; then I can get back to normal life.

Meg and John were extremely proud to know that their garden produced the highest number of species of any: 45. Perhaps if they ever sell their property, the Estate Agent could mention the fact: "Fine house in Esher, exceptional moth area . . ." Maybe not!

Even now, after ten days, fourteen trapping sessions and countless hours of trapping time, still new species came, including a harbinger of the changing year (at least by name), a September thorn.

For the last time, I thanked my patient hosts for dinner, a bed and the loan of their garden. The day, as they had all been, was bursting with sunshine. The walk, ticking off the last few miles, was a methodical plod, no longer with the thrill of expectancy, just the last steps of my happy adventure.

The evening's party, mostly for hosts, toasted the final score. Some time before midnight (well, I think it was before midnight), came number 206 – a Copper underwing (you know, the moth that enforces the law among the Large yellow underwings!). That represents 24 butterflies and 182 moths. I'm proud to announce that it's a record, for the simple reason that no-one has a previous record!

And so about £1600 was raised for the Surrey Wildlife Trust, of which some, I hope, will go towards the publication of the Surrey Moth Atlas. I'd like to think that, as well as being a money event, the "Moth-a-Thon" was worthwhile for the enjoyment caused, and for the eyes opened to our wonderful moth fauna here in Surrey. I'd like to express my sincere thanks to all who helped and participated: the hosts, especially, for their provision of food, accommodation and all sorts of other strange things, beyond the call of duty; the moth experts, particularly Graham and the two Martins, who showed not only expertise, but also good humour and forbearance, especially in answering our amateurs' questions. I would like to thank Clare Windsor at Surrey Wildlife Trust for her help in publicity and overall enthusiasm. And most of all I'd like to thank you, the sponsors and partakers, for being willing to support the project.

COPPER-BOTTOMED CONSERVATION

A project is under-way to reintroduce the Large copper butterfly using larvae from a Netherlands population. Last recorded in the Norfolk Broads in 1860, the Large copper has continued to thrive in Holland's Weerribbe National Park, which is twinned with the Broads.

The project will involve a study of the survival of the larvae in different habitat situations and the results will determine whether a full-scale reintroduction is feasible. A previous attempt to re-establish the species at Woodwalton Fen was unsuccessful. Management work is already under-way to improve two sites where the Large copper foodstuff, the great water dock, is found.

BOOK REVIEWS

The book of the spider by Paul Hillyard. Hdbk 8vo, 196pp. 12 coloured pages, black and white illustrations. ISBN 0 09 177631 7. Hutchinson, 1994. Price £16.99.

Sub-titled "From arachnophobia to the love of spiders," this book makes a welcome change from both the taxonomic treatise and the "how to keep" books that are now flooding the market. It also has the advantage of being clearly and well printed on a matt paper and bound well.

Now as to the contents. These are a mix of anecdotal and historical, containing many interesting and often amusing facts and perhaps some fiction, concerning spiders and people's reactions to them. There is a good selection of both poetry and fascinating extracts quoted from older authors such as Mouffet (father of little Miss Muffet who was so unnecessarily frightened by one!), Lister and Topsell. Short biographies are given of the more famous arachnologists and this helps to clarify the difference between the two Pickard-Cambridges who are so often confused.

Short accounts are given of the various groups of spiders, such as venomous (with an excellent account of Tarantism, and no, the Tarantula spider is not responsible – get the book to find out who is!), aeronautic, fighting and remarkable spiders. Information is given about the uses to which spiders' silk is put and how spiders have been used to dress wounds. Possibly a revelation to many will be that the so-called "bird-eating" spiders of South America really prefer frogs, lizards and snakes, a venomous pit-viper standing little chance when fancied as lunch by a *Grammostola*.

There is a brief section on conservation, a fairly comprehensive bibliography, a comprehensive index and the book has a number of charming black and white and excellent colour illustrations. All in all it is an excellent and very informative read.

Brian Gardiner

Glow-worms by J. Tyler. A5. 48pp. 24 figures. Tyler-Scagell, Sevenoaks.

On first glance, this book appeals wholeheartedly to the amateur naturalist. However, a closer inspection of the bibliography reveals that this group of insects has been severely neglected in both pure entomological and ecological studies and as such the book provides an introductory guide to the more serious student. Although a short publication, it provides detailed information on all aspects of glow-worm biology.

The book is divided into six chapters. The first chapter introduces the reader to the subject of glow-worms. It discusses, in general, the taxonomy and biology of the Lampyridae and concludes with an introduction to the two British species, *Phosphaenus hemipterus* and *Lampyris noctiluca*, whetting the appetite for further discourse on the subject.

The second chapter deals in considerable detail with the natural history of the glow-worm. Encompassing aspects of entomology (eg life cycle details), ecological interactions (eg predation on snails), biochemistry (eg function of the light organ) and cell biology (eg structure of the light organ), complemented with numerous colour plates and detailed text figures, the chapter forms the backbone of the book.

Chapters three and four deal with the distribution of and threats to glow-worms. Although brief (both chapters comprise less than six pages) the information conveyed highlights the need for further work so as to pinpoint the major threats. Areas such as habitat fragmentation and the effects of pollution are focused upon and pressed for requiring urgent investigation.

The final chapter concludes the book with a summary of glow-worm watching; when to search, where to look and how to deal with records. Overall this book provides a superb guide to the natural history of British glow-worms, filling a needed gap in the literature surrounding this group within the Coleoptera for both amateur and professional entomologists.

Mike Bonsall

Projects with freshwater life by Andrew Cleave. A4, hdbk, pp128. Profusely illustrated in colour and black and white. ISBN 1 85223 625 6. Crowood Press 1992. Price (from Booksave) 99p.

One of my main entomological interests when I was very young was pond-dipping and making and keeping an aquarium, in which I kept caddis larvae, dragonfly nymphs, water boatmen, snails, blood-worms etc. (Not always very successfully I might add.) In those days the only books available to me were Mial's *Natural history of aquatic insects* and Furneaux's *Life in ponds and streams* both originally written in the last century and perfectly adequate for identification of many, particularly the commoner, species and with good instructions for the collection and preservation of water life. Ecology, conservation, prey and predator relationships and habitat management were subjects only just, if at all, being thought of. How lucky, therefore, are youngsters today to have access to a book such as this. Ponds and other sources of water are both becoming a scarce commodity and are likely to be polluted. The more awareness there is of this and the more interest that is taken in them, then the more chance there is of saving ponds and rivers from destruction and pollution.

This book is divided into chapters, each of which details a series of "projects" that can be done by youngsters in particular (at whom the book is clearly aimed). These are not details of experiments to do, but a guide as to how a particular aspect of the subject should be studied and what to look for.

The book commences with an introduction to the various freshwater habitats, goes on to explain how to study pond life (making equipment; using books and keys; how to make photographic records). There is a section on how to make ponds, both small and large, and also aquaria, and the pond chapter is followed by sampling in rivers. A considerable number of the projects are devoted to how to study the various freshwater organisms – a large number of which are of course insects, but fish, molluscs, snails, frogs and micro-organisms are of course included. The margins of ponds and streams are not neglected, nor is the important subject of conservation. The signs to look for that indicate pollution are described, and the steps needing to be taken in order to clean up and keep healthy river banks.

This is an integrated text that deals with all life, not just insects, but then in such a habitat one cannot be too much a specialist, for all water life species interact with each other – a louse on a fish; great diving beetle nymph eating a tadpole; swamp spider eating a damselfly. These three examples are illustrated in colour. Indeed the many colour illustrations are really quite stunning and these are backed up by numerous black and white drawings (some in two-tone colour) illuminating particular points. The author is a former biology teacher and now warden of the Bramley Frith Study Centre in Hampshire. He clearly knows his subject and has put it over in an entertaining way. Many of his observations, such as keeping photographic records and notes, and how to use identification keys, are of use in other disciplines and provide a good groundwork. Altogether an exceedingly well-printed book in a colourful cover showing a dragonfly laying an egg into water and it deserves to be in the Christmas stocking of every youngster, although at the price I found this book they could well afford it out of their pocket-money!

Brian Gardiner

WANTED . . . A SECRETARY

At next April's AGM our current Secretary, Simon Fraser, will be leaving us due to commitments overseas. We are therefore looking for a replacement. If you are interested please contact Simon who will be pleased to tell you what his job entails.

THE RODING VALLEY NATURE RESERVE, LOUGHTON, ESSEX*by Wayne Jarvis (9899)**9a Brook Street, Luton, Bedfordshire LU3 1DS.*

The Roding Valley nature reserve is situated just outside of Loughton in Essex, and lies alongside the M11 motorway. The river Roding, which flows through the reserve, and the pond in the reserve give a wide and varied selection of aquatic insects. Dragonflies and damselflies are very abundant darting above the water's surface. Below, there are bugs galore including water scorpions and stick insects, saucer bugs and of course water boatmen.

The reserve comprises a series of meadows, each of which are dominated by particular plant species such as meadow buttercup, ox-eyed daisy or thistle. The dominant grass species is *Poa pratensis* which gives a canopy height of around a metre in early summer. This provides a refuge for many species of insect, and during my visits I have encountered many sawflies, beetles (including many species of ladybird), flies, wasps, bees, and of course butterflies.

The dominant butterfly species is the Meadow brown, which can be seen in their thousands during the early summer. Thistle patches are good homes for other species such as the Small tortoiseshell and Red admiral and the shorter turf, rich in vetches, are commonly visited by the Common blue and Small copper. The grass canopy gives shelter and protection for several species of skipper, including the Essex skipper (some butterfly species found in the reserve are illustrated in plates FFF-HHH). Burnet moths are also very abundant.

The reserve, which is run by the Essex Wildlife Trust, is rich in many insect species and occasionally turns up something more unusual. Whether aquatic or terrestrial insects take your interest, it is definitely an area worth a visit.

*

*The AES would like to wish everyone a very
merry Christmas and prosperous New Year.*

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